Competitiveness of Ontario's Horticultural Industries

Ontario Ministry of Agriculture and Food

Competitiveness of Ontario's Horticultural Industries

Final Report

1 February 1987

Kenneth F. Harling and Associates

Kenneth F. Harling, and

Nancy Brown-Andison,

with the assistance of

W. Smith Greig

89-00656/

Table of Contents

Executive Summary 1

Section 1. Introduction
- 1.A. Overview 1-1
- 1.B. Objectives 1-1
- 1.C. A Conceptual Model of the Horticultural Industry 1-2
- 1.D. Methodology 1-2
- 1.E. Outline of the Report 1-2

Section 2. The Canadian Horticultural Industries
- 2.A. Fruit and Vegetable Production 2-1
- 2.B. Fruit and Vegetable Processing 2-2
- 2.C. Trade In Fruit and Vegetables 2-2

Section 3. The US Horticultural Industries
- 3.A. Fruit and Vegetable Production 3-1
- 3.B. Fruit and Vegetable Processing 3-4

Section 4. Government Policies
- 4.A. Canada Government Policies 4-1
- 4.B. Provincial Government Policies 4-8
- 4.C. United States Government Policies 4-10
- 4.D. Summary 4-13

Section 5. Competitiveness
- 5.A. The Meaning of Competitiveness 5-1
- 5.B. Macro Competitiveness 5-3
- 5.C. Micro Competitiveness 5-3
- 5.D. Summary 5-13

Section 6. Factors Driving Demand
- 6.A. Consumer Preferences 6-1
- 6.B. Overall Demand 6-1
- 6.C. Promotion 6-3
- 6.D. Marketing Channels 6-3
- 6.E. Summary 6-4

Section 7. Factors Driving Supply
- 7.A. Fresh Produce Handling Facilities 7-1
- 7.B. Changing Suppliers 7-1
- 7.C. Rationalization of Processing Plants 7-3
- 7.D. Role of Multinational Processors 7-3
- 7.E. Role of Marketing 7-3
- 7.F. New Products 7-4
- 7.G. Summary 7-5

Section 8. No Agreement
- 8.A. Consumption 8-1
- 8.B. Products 8-1
- 8.C. Production 8-1
- 8.D. Processing 8-2
- 8.E. Conclusions 8-2

Section 9. An Agreement
9.A. Interest in an Agreement 9-1
9.B. Concern over Negotiations 9-1
9.C. Possible Policy Changes 9-1
9.D. Consumption 9-5
9.E. Products 9-5
9.F. Processing 9-6
9.G. Labor Market Adjustments 9-6
9.H. Strategies to Facilitate Adjustment 9-6
9. I. Conclusions 9-7

Section 10. Further Research Needs 10-1

Appendix A. Tables of Economic Statistics on the Fruit and Vegetable Industries

Appendix B. Questionnaire

Appendix C. Those Interviewed In Depth

Appendix D. Tables of Economic Statistics on the Fruit and Vegetable Industries

List of Figures and Tables

Figures

Figure 1.1. A Conceptual Model of the Horticultural Industry 1-3
Figure 3.1. Location of Major Fruit Producing Areas in the United States. 3-2
Figure 3.2. Location of Major Vegetable Producing Areas in the United States. 3-3
Figure 5.1. The Cost Structure of Different Competitors Serving the Ontario Market 5-2
Figure 5.2. The Cost Structure of Different Competitors Serving the Ontario Market After Government Intervention. 5-2

Tables

Table 5.1. Competitive Position of Ontario's Principal Fresh and Processed Fruits and Vegetables and Their Products Vis-a-Vis the United States in 1986 5-5
Table D.2.1. Nominal Dollar Value (in Millions) and Provincial Share of Fruit and Vegetable Production D-1
Table D.2.2. Number of Farms and Acres in Fruit and Vegetable Production in Ontario and Canada, 1981. ..... D-2
Table D.2.3. Relative Contribution of Fruits and Vegetables to Total Agricultural Production . D-3
Table D.2.4. Ontario and Canada Fruit and Vegetable Production, 1985. ..... D-4
Table D.2.5. Percent of Ontario's Fruit and Vegetable Production Going to the Processing, 1985 ..... D-5
Table D.2.6. Canadian Fruit and Vegetable Processors (1980-1984) D-6
Table D.2.7. Ontario Fruit and Vegetable Processors (1980-1984). D-7
Table D.2.8. British Columbia Fruit and Vegetable Processors (1980-1984) D-8
Table D.2.9. Quebec Fruit and Vegetable Processors (1980-1984) D-9
Table D.2.10. Ontario Exports of Fruits and Vegetables ('000s). D-10
Table D.2.11. Ontario Imports of Fruits and Vegetables ('000s) D-11
Table D.3.1. United States Value of Fruit Production, 1984 ..... D-12
Table D.3.2. United States Value of Vegetable Production, 1984 ..... D-13
Table D.3.3. Apple Utilization in the United States, 1981-1985 (Metric Tonnes). D-14
Table D.3.4. Cherry Utilization in the United States, 1981-1985 (Metric Tonnes). D-14
Table D.3.5. Grape Utilization in the United States, 1981-1985 (Metric Tonnes) D-15
Table D.3.6. Peach Utilization in the United States, 1981-1985 (Metric Tonnes) D-15
Table D.3.7. Strawberry Utilization in the United States, 1981-1985 (Metric Tonnes). D-16
Table D.3.8. Bean (Snap) Production in the United States, 1981-1985 (Metric Tonnes). D-16
Table D.3.9. Broccoli Production in the United States, 1981-1985 (Metric Tonnes) D-17
Table D.3.10. Carrot Production in the United States, 1981-1985 (Metric Tonnes) D-17
Table D.3.11. Cauliflower Production in the United States, 1981-1985 (Metric Tonnes) D-18
Table D.3.12. Sweet Corn Production in the United States, 1981-1985 (Metric Tonnes) D-18

Table D.3.13. Cucumber Production in the United States, 1981-1985 (Metric Tonnes) D-19
Table D.3.14. Pea Production in the United States, 1981-1985 (Metric Tonnes) D-19
Table D.3.15. Potato Production in the United States, 1981-1985 (Metric Tonnes)..... D-20
Table D.3.16. Tomato Production in the United States, 1981-1985 (Metric Tonnes)..... D-20
Table D.3.17. United States Fruit and Vegetable Processors, Selected Years,1980-1984... D-21
Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products..... D-22
Table D.5.1. Labour Productivity of Canadian and U.S. Food Processing Industries,1984 .. D-27
Table D.5.2. Production, Trade and Disappearance of Selected Fruits in Canada for an Average Year, 1982-84. ..... D-28
Table D.5.3. Production, Trade and Disappearance of Selected Vegetables in Canada for an Average Year, 1982-84..... D-29
Table D.5.4. Average Farm Land and Buildings Prices in Canada and the United States in 1984. ..... D-30
Table D.5.5. Average Annual Yields for Selected Crops in Ontario and Major Producing States in the United States, 1983-85 ..... D-31
Table D.6.1. Average Annual Per Capita Disappearance in Kilograms of Selected Fruits in Fresh Equivalents in Canada. D-34
Table D.6.2. Average Annual Per Capita Disappearance in Kilograms of Selected Vegetables in Fresh Equivalents in Canada. D-35

Executive Summary

The horticultural subsector of the economy deals with producing and processing fruits and vegetables. The principal activities in this sector are the industries run by agricultural producers with fruit and vegetable enterprises, and processors, who are primarily canners and freezers. This study, conducted under the auspices of the Ontario Ministry of Agriculture and Food and the Ontario Ministry of Industry, Trade, and Technology, examines the competitiveness of these industries vis-à-vis those of the United States (US). Competitiveness of these industries is of special concern given the bilateral talks, regarding lowering of barriers to trade, currently under way between Canada and the United States.

Assessment of the competitiveness of Ontario's horticultural industries now and in the future has been accomplished in three stages. The first step was to carry out an extensive review of information on commodities and industries for the purpose of building an information bas The second stage involved intensive personal interviews with leading industry representatives to determine their opinions about their industry's competitiveness, and the opportunities and constraints arising from bilateral trade negotiations with the United States. The third stage of the study consolidates the factual information from the first phase with the perceptual information of experts from the second phase. This report is the result of this third phase.

The sources of information used were both primary and secondary. The primary sources were representatives of marketing boards and associations, trade associations, company executives, government, and academia. The secondary sources of information included government statistics and reports, the academic literature, previous consulting reports, and the business press. Most of the results of the study were, however, based on expert opinions. While these opinions may not have been fully accurate, they express the perceptions of those who understand the industry. Given the complexity of this set of industries and the limitations of public knowledge about its competitiveness, verification of these opinions was difficult . As much verification as was possible under the time and money constraints was conducted.

The Current Situation in Canada

The current situation of Ontario's important horticultural industries was appraised through an examination of Canadian and US statistics, an assessment of policies affecting competitiveness, and a comparison of competitiveness. In 1981, 14,608 of Ontario's farmers were classified as primarily fruit or vegetable producers, and 270,708 acres of farm land were devoted to production of these crops. In 1985 fruit and vegetable farmers in Ontario produced $112 million worth of fruit and $347 million worth of vegetables. Ontario's production of fruit and vegetables dominated Canadian production, accounting for 43 percent of total Canadian fruit production and 42 percent of Canadian vegetable production.

In 1985 Ontario's 99 fruit and vegetable processing establishments, employing over 6,365 production workers, added value of $555 million to shipments with a total value of $1236 million. Again, the Ontario industry was the leader in Canada with its shipments representing 55 per cent of the Canadian industry's shipments and 56 per cent of its added value. Canning and preserving activities -- measured in terms of number of establishments, number of production workers, wages, value added, and value of shipments -- exceeded freezing activities in Ontario by around five times.

The Current Situation in the United States

The US horticulture industries are much larger than those of Canada, but Ontario produce does not compete with all US sources. Rather, US sources of competition are diverse, varying by commodity and by the product's being fresh or processed. Competition in some of the fruits comes from many of the states at the same latitude as Ontario. Washington is an important source of cherries and Concord grapes, Michigan of apples and cherries, and New York of apples, cherries, and grapes. Competition in peaches comes from California and South Carolina, while for strawberries it comes

from California and Oregon. Competition in vegetables also tends to originate in states at the same latitude as Ontario. Sweet corn, peas, and beans come from Washington, Oregon, Idaho, Minnesota, Wisconsin, and New York, cucumbers from Michigan, but nearly all the tomato products come from California.

The US processing industries have nearly ten times the number of establishments that Canada has, but they produce total shipments worth 19 times the value of Canadian shipments. This highlights the enormous size of US processing plants. The large size of these plants, made possible in part by the large market served by them, has allowed them to capture significant economies of scale.

Factors Affecting the Competitiveness of Ontario's Industry

The competitiveness of Canada's and Ontario's fruit and vegetable industries against US competition has been influenced both by government policies and by costs. Many of the policies in place are seen as having supported orderly marketing. Policies seen as contributing to orderly marketing include seasonal tariffs, dumping duties, surtaxes, grade standards, container standards, packaging and labelling standards, control of imports, advanced crop payments, price support through governmental purchase of product, and price stabilization. Some also consider marketing boards part of this list.

Controlling the flow of US product to the Canadian market is seen as very important by the horticultural industries because of the enormous size and close proximity of the United States. Three problems are cited as likely without such policies to control entry of US product: 1) occasional disposal of US surpluses of fresh and processed product in Canada, destroying market prices in Canada; 2) regular disposal of US fresh product in Canada at prices possibly below the full cost of production by US growers, who have already covered most of their costs by sales made before Canadian product is ripe, lowering market prices; and 3) entry of poor quality product from the US, discouraging Canadian consumers and depressing product prices for good quality Canadian product. The net effect of these policies has been to protect the fresh market when domestic product is in season and to favor the processed product throughout the year. Prices have been higher and more stable than would otherwise have been the case.

In spite of all these policies, the most significant condition affected by government activity is the exchange rate, a consequence of a variety of factors rather than a specific policy. The unprecedentedly low value of the Canadian dollar against the US dollar in recent years has overwhelmed the effects of all the government policies important when the Canadian dollar was higher. This has alleviated much of the pressure from US competition for the present. Indeed, the processors say they would be out of business if the dollar went to par.

The competitiveness of the Canadian industries vis-à-vis the US ones, in the longer run, will be determined largely by the cost structures of the industries in the two countries. Most fresh vegetable and apple production in Ontario is cost competitive, while cherry, grape and peach production is not. Some of the costs may be altered by economic forces, while others which are determined by such things as climatic differences never will be. This consideration is especially significant when dealing with horticultural crops which have different yields in varying locations, require a certain number of days before they ripen, and are affected by soil type.

When Canadian processors were asked to assess their competitiveness and the underlying factors affecting it, canners and freezers of specialty products were very gloomy, while freezers of vegetables felt they could be competitive. A common refrain from all was that marketing boards, whether or not they had price- setting powers, had managed to raise prices too high. Labor costs were seen as equal to or higher than those in the United States, tending especially to be higher for the large unionized processors in Canada. Packaging costs were equal or higher, tending to be higher for the smaller canners. Specific characteristics Ontario processors saw as working against their ability to compete with US processors were the short harvest season in Ontario, their small size and the dominance of US brands for higher priced products.

Changes In Demand

The future of the horticultural industries is being driven by changes in both demand and supply factors. On the demand side, consumer preferences are changing. Consumers are concerned about health and nutrition, want convenience and variety, and are looking for quality. They seem willing to pay the price necessary to get these characteristics. These changes have been reflected within the demand for fruits and vegetables. While total market growth has been slow, with most growth due to population growth rather than to increases in per capita consumption, per capita consumption of canned products has declined and that of fresh and frozen product increased. Canners, alarmed over this trend, have moved to improve their share of per capita consumption through generic advertising of canned products. Their efforts in promotion appear to have been successful in short run market tests, but their ability to prevent market erosion in the long run is at best uncertain, since canned products do not match the new preferences of consumers. Their other efforts involve changing the canned product, such as altering the canning process so that the product appears to be more like the fresh product. At present, these efforts are in their infancy, but they do not look as if they will have a big impact. The ability of processors to influence the retail consumer of food products is also decreasing , since retailers now view themselves as agents of the customer rather than of the producer. Retailers are now much more sensitive to customer needs as they seek to capture customers from other retailers in an increasingly rivalrous environment.

Changes In Supply

Several supply factors drive the evolution of these industries. A fundamental change has been the continual expansion in the geographic spread of markets. Fresh vegetables regularly enter Canada from the southern United States and Mexico during part of the year. Fresh fruits come from as far as South America and Africa, as well as Europe. Processed products come from even further afield. The larger spread of markets means that there are more competitors and that the likelihood of some competitor being stronger is greater. Within Ontario, the possible use of former tobacco lands for vegetable production presents the greatest potential source of competition. Use of tobacco lands could increase the acreage devoted to vegetable production by one-third and much of the product would probably move into the fresh market. Competition from Québec has also been increasing, being facilitated by grants aiding expansion of the industrial infrastructure and by competitive pricing of processing crops to enable products based on them to enter the Ontario market and compete on a price basis. Competition from the United States has increased with the decline of its traditional market in Europe, while within the United States many states are promoting fruit and vegetable production as a way of solving farm income and crop surplus problems. Competition from the rest of the world is also increasing as many developed and less developed countries have started to export fruit and vegetable products for various reasons. All this increased competition means that the survival of producers and processors will depend on their ability to compete.

Processors' ability to compete will depend on several factors. They must expand the output handled through their plants so they can lower per unit costs. This means increasing the size of the plant and running it for a greater part of the year. They will also have to compete among themselves so that retailers will carry their product. This means they must develop or maintain a strong brand, since retailers will always carry the one or two leading brands. US nationals and subsidiaries of multinational food processing firms currently have strong brands throughout North America, which raises the question of whether or not Canadian firms have the marketing expertise and financial resources to compete with these companies. Some processors are trying to minimize competition by modifying products or processes so they do not seem processed and by finding specialized markets. Other processors are searching for new markets by pursuing activities such as branding fresh produce.

No Trade Agreement

The outlook for the horticultural industries, if no trade agreement is reached between Canada and the United States, appears to be a continuation of current trends. The overall demand will increase slowly while consumers will continue to increase fresh and frozen consumption at the expense of canned product. The high cost of Ontario's and Canada's industries means that they will have to rely

primarily on the domestic market. The processing industries will have to rationalize, reducing the number of plants and increasing the size of each, in order to stay cost competitive. Many of the closures of small plants will be in rural communities with few alternative prospects for their workers. Overall, the processing industries will employ fewer workers.

A Trade Agreement

Ontario's fruit and vegetable industries will have to make significant adjustments under an agreement with the United States if they are to be competitive. The loss of many of the policies providing an orderly market in Canada would require the industries to reduce their costs so that they could compete in a market with lower, more unstable prices than they have been used to. The ability to this of producers of particular commodities and of the different types of processors is unclear. At present, those who find themselves competitive feel a trade agreement will maintain the present situation; those who find themselves uncompetitive at present feel that they will continue to be so under an agreement.

Those most concerned about an agreement are fruit producers, canners, and processors of formulated and branded product. Producers of fruit in the Niagara Peninsula face extremely high land costs, which prevent them from lowering their costs enough to be competitive. The canners and processors of formulated and branded products are mostly subsidiaries of US corporations with considerable surplus capacity in the United States. The view of the industry as a whole is that production is inherently more expensive in Canada, and that many processors would consolidate their production in the United States both to use surplus capacity there and to lower their costs. The industries themselves have not formulated policies that could be introduced to help them adjust , since they are satisfied with the current situation. Possible policy options the government could consider, however, are gradual reduction in the current policy measure to slow the speed of adjustment, financial compensation for those who could not adjust, and financial assistance for those who could be competitive under the new situation.

Further Research Needs

Lack of research into the horticultural industries in the past means that much research is needed to fill the numerous gaps in knowledge about its workings. The first and most basic research needed is detailed quantitative analysis of the competitiveness of Ontario's industries. A second research need is analysis of the impact of particular policies on the industry, including the use of bulk shipments and the effects of various grant programs providing assistance in structural adjustment. Finally, the changes currently underway in the industry require analysis to determine their long- run implications for the industry.

Section 1 - Introduction

1.A. Overview

The horticultural subsector of Ontario's economy deals with the production and processing of fruits and vegetables. Consisting mainly of agricultural producers with fruit and vegetable enterprises and of processors who are mostly canners and freezers, the industries in this subsector represent a considerable amount of economic activity. In 1981, the 14,608 of Ontario's farmers who were classified as primarily fruit or vegetable producers had 270,708 acres of farm land devoted to production of these crops. By 1985, OMAF statistics show Ontario's fruit and vegetable farmers producing $112 million worth of fruit and $347 million worth of vegetables. Ontario's fruit and vegetable crops dominated Canadian production, accounting for 43 percent of total Canadian fruit production and 42 percent of total Canadian vegetable production. In 1984, Ontario's 99 fruit and vegetable processing establishments, employing over 6,365 production workers, shipped $1236 million dollars of product which included $555 million in value added through processing. Overall, the Ontario processing industry contributed 55 per cent of the Canadian industry's shipments and 56 per cent of its value added. Within the Ontario sector, canning and preserving activities -- measured in number of establishments, number of production workers, wages, value added and value of shipments -- were some five times greater than freezing activities.

This study, conducted under the auspices of the Ontario Ministry of Agriculture and Food and the Ontario Ministry of Industry, Trade, and Technology, was undertaken to assess the competitiveness of Ontario's horticultural industries vis-à-vis the United States' (US) industries . Since bilateral talks aimed lowering trade barriers between the two countries are currently underway between Canada and the United States, competitiveness of the industry is of special concern.

1.B. Objectives

The general objective of the study as specified in the terms of reference was to examine the competitiveness of Ontario's horticultural industries--primary and processing--and the possible impacts and adjustments that may arise from bilateral trade negotiations. This overall objective was pursued through a set of specific objectives also identified by the terms of reference (Appendix A). In brief, these specific objectives can be stated as follows:

1) to review and update the statistical and economic profile of the Canadian and US horticultural industries;

2) to identify government policies affecting the competitiveness of Ontario's industry;

3) to compare the competitiveness of the industries between the two countries;

4) to examine principal factors driving the evolution of demand for Ontario's horticultural produce and products;

5) to examine principal factors driving the evolution in the supply of Ontario's horticultural produce and products;

6) to assess the position of Ontario's horticultural industries in the future, given the factors driving its evolution and assuming maintenance of current governmental policies in Canada and the United States;

7) to assess the position of Ontario's horticultural industries in the future, given the factors driving evolution and assuming removal of governmental policies in Canada and the United States that limit trade, plus proposing adjustment policies; and

8) to outline gaps in statistical and economic information that should be covered.

1.C. A Conceptual Model of the Horticultural Subsector

Dealing with the horticultural subsector requires recognizing that the industry is not a single, homogeneous unit but a group of related industries. The relationships formed are shown in the model of the general structure of the subsector in Figure 1.1. Agricultural production, the initial industry in this subsector serves as its basis. Fresh fruits and vegetables produced on farms can be sold to either the fresh or the processing market, so that buyers in these two markets compete for a share of the farmer's produce. Produce in these markets may also, however, have to compete with produce from other sources; such competition will occur in the domestic market if produce is imported to Ontario, or in non-Ontario markets if Ontario produce is exported. The processed product market takes over after the produce is sold and processed. Competition for Ontario produce comes at this point from two sources: it vies with non-Ontario product through import and export activities, and as a processed product faces competition from fresh produce.

This brief description of the horticultural industry shows that it is extremely complex, with competition occurring in three different markets in Ontario alone. Therefore, Ontario's competitiveness in any market depends on three factors -- the characteristics of its products; the cost of its production and processing activities, in part influenced by government policies; and, the allowance of its competitors to enter the markets, a condition influenced largely by government policies. This explanatory model can also be used to analyse individual commodities when commodity-specific recommendations become necessary, a situation that often occurs because each commodity has its own unique production and processing requirements, and markets. Generalizing about the competitiveness of the industries remains difficult, however, because of the complex relationships in the sector, the large number of government policies, and the extensive variations among commodities.

1.D. Methodology

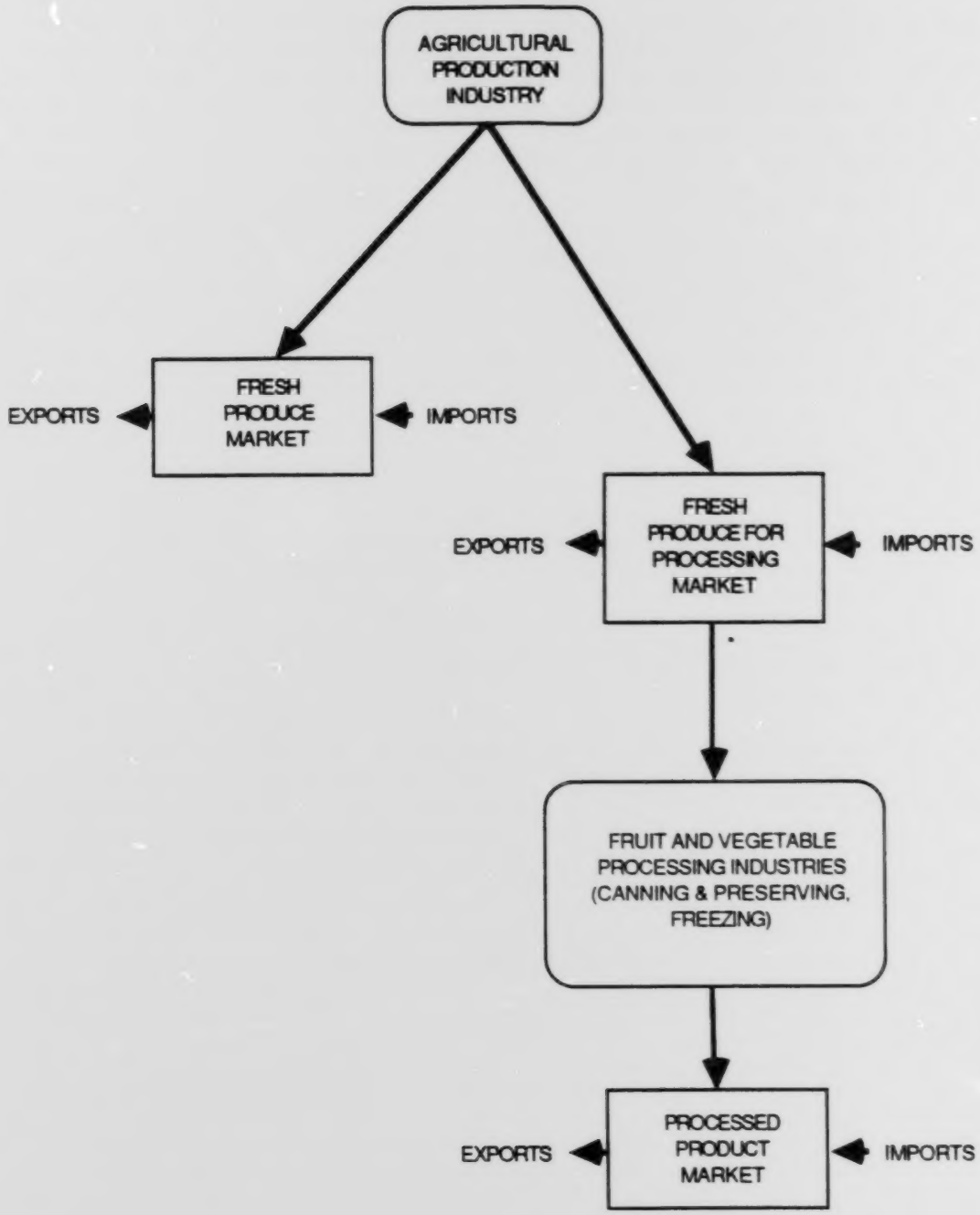
This study was conducted in three stages. The first stage encompassed an extensive review of information on commodities and industries for the purpose of building an information base. The second stage involved intensive personal interviews with leading industry representatives to record their opinions on their industry's competitiveness, and the opportunities and constraints they saw arising from bilateral trade negotiations with the United States. These interviews were based on the questionnaire shown in Appendix B; the industry representatives interviewed are identified in Appendix C. The third phase of the study consolidated the factual information from the first part with the perceptual information of the experts interviewed in the second. The content of this report is based on the third phase.

Crucial to both conducting the study and reporting its results was the quality of the information available. The government statistics on the industries provided an impartial factual basis for performing analysis and drawing conclusions. Public statistics for this complex set of industries were, however, unfortunately limited, and some which were available were not amenable to the needs of this study. As well, little analysis of questions concerned in this study has been carried out using these statistics. This situation resulted in much of what is reported in this study being based on expert opinion. Although such a source may be useful in that the experts are intimately aware of their immediate situations and of the issues they feel are important to the industry, it may also be biased by being based on perceptions colored by emotion or on an only partial understanding of the actual situation. To counteract the condition, as much verification of opinion as was possible within the existing constraints of time and budget was carried out. Future effort will be most rewarding if devoted to independent quantitative analysis of the horticultural industries with expert opinions acting as hypotheses to be tested.

1.E. Outline of the Report

The remainder of the report is organized into nine sections. Sections 2 through 5 review the current competitive situation of Ontario's fruit and vegetable producing and processing industries. Section 2 examines economic statistics for Canada as a whole and, for 1980 on, provincially for

Figure 1.1. A Conceptual Model of the Horticultural Subsector.



Ontario, Quebec, and British Columbia. Section 3 reviews economic statistics for the United States as a whole and, again from 1980 on, for principal states. Section 4 presents the current policies affecting the competitive situation of the industries in Canada and the United States. Finally, Section 5 examines the competitiveness of the Canadian industries vis-à-vis US ones.

Sections 6 through 9 discuss developmental aspects of the horticultural subsector. Sections 6 and 7 deal with factors driving the evolution of Ontario's fruit and vegetable industries, the former reviewing demand factors driving the evolution of these industries while the latter surveys supply factors. The projected position of the fruit and vegetable industries in the foreseeable future, should there be no bilateral trade agreement with the United States, is dealt with in Section 8; Section 9 deals with the conditions expected for Ontario's fruit and vegetable industries were an agreement to take place.

The final section, Section 10, discusses the present state of research on the competitiveness of the sector and details the needs for filling in gaps in available statistical and economic information. It focuses on the competitiveness of the sector and on issues related to it.

Section 2 - The Canadian Horticultural Industries

This chapter reviews general statistics and data currently available on the Ontario fruit and vegetable industry, and makes comparisons to the Canadian industry as a whole and to the provinces of British Columbia and Québec. The data presented considers the size, location, historic performance and general competitiveness of the individual industries as shown by product and trade data. The information is divided into three parts: the first deals with the production of fruit and vegetables, either for the fresh or the processing market; the second deals with the fruit and vegetable processing industries; and, the third covers trade.

2. A. Fruit and Vegetable Production

The province of Ontario is the major producer of fruits and vegetables in Canada. In 1985, Ontario produced $112 million of fruit for the combined fresh and processing markets (Table D.2.1.[1]). This volume represents 43 per cent of the total value of Canadian fruit production, exceeding the production of all other provinces. In the same year, British Columbia was the second largest producer with $81 million, representing 31 percent of the total value of Canadian production. Overall, Ontario has maintained a fairly constant share of Canadian fruit production, which has been relatively static since 1980.

Ontario produced $347 million, or about 42 per cent, of the total Canadian vegetable production of $825 million, including potatoes, in 1985. These figures show it to be the largest vegetable producing province (Table D.2.1). Potato production, which accounted for only $39 million of Ontario's total vegetable production for that year, amounted to $281 million of Canada's total vegetable production; therefore, when potato production is excluded, Ontario produced 57 percent of the national value of vegetable production. Over the last few years, however, the relative importance of Ontario's vegetable production has declined slightly, since, while the value of Canadian vegetable production increased by 50 percent over the 1980 to 1985 period, Ontario's production increased by only 43 per cent. Still, the absolute dollar increase of $104.4 million was a significant amount of money (Table D.2.1).

That fruit and vegetable production is an important part of Ontario's agricultural production is indicated by the number of farms and acres in Ontario classified as involved primarily fruit and vegetable production. In 1981, 14,608 Ontario farms, or about 18 per cent of the total, were listed in this primarily fruit or vegetable producer category. As well, 109,637 hectares (270,708 acres) of provincial farmland were devoted to fruit and vegetable production (Table D.2.2). Since 1980, fruit production has represented about 2 per cent of the total value of Ontario's agricultural production , while vegetable production has grown steadily from 5.7 per cent of the total value of production in 1980 to 6.7 per cent in 1985. Fruits and vegetables in total represented almost 9 per cent of the value of Ontario's agricultural production. In contrast, fruit and vegetable production in British Columbia, though not as great in total, was more significant to B.C. agriculture, making up 18 per cent of that province's agricultural production (Table D.2.3). In combination then, the above data show that, while in absolute terms Ontario produces the most fruit and vegetables of any province, when viewed in terms of total provincial agricultural production, fruit and vegetable production is a less significant portion of Ontario's agricultural output than of British Columbia's.

Looking at individual commodities shows that Ontario produced 81 per cent of Canada's peaches and 75 per cent of its grapes in 1985. While only 38 per cent of Canadian apples originated in Ontario, apple production was the most valuable fruit crop in the province. Ontario strawberries represented 30 per cent of national production in 1985 (Table D.2.4). Tomatoes were by far the most significant vegetable, with Ontario's production valued at over $93 million. This represented 85 percent of the national production. Ontario also produced over half of the nation's mushrooms, sweet corn, cucumbers and cauliflower. Ontario potatoes, on the other hand, represented only 15 percent of national production. Of the eleven fruit and vegetable crops listed in Table D.2.4, Ontario's production of over 50 per cent of the total Canadian production of six of them.

---

[1] All tables designated as "Table D." followed by a number appear in the final appendix to this report.

Processing plays an important role in Ontario's fruit and vegetable subsector as Ontario's production of fruit and vegetables can only occur over a small part of the year. Processing helps preserve Ontario produce for consumption when fresh product can not be produced. The proportion of agricultural product going to the processing market varies considerably by crop (Table D.2.5.). The only fruit with a very large processing market has been grapes, of which about 90 percent went to processing in 1985. The processing market is much more important for the vegetable crops with virtually all peas, and about 63 percent of tomatoes and sweet corn going to processing in 1985.

2.B. Fruit and Vegetable Processing

The fruit and vegetable processing industry involves the manufacture of canned, preserved and frozen fruits and vegetables and their products. In the fruit and vegetable processing industry, a division by type of process used rather than by the particular fruit or vegetable processed occurs. As a result, Canadian data are divided into two industries, the first includes fruit and vegetable canners and preservers, and is designated with Standard Industrial Classification (SIC) number 1031. The second includes frozen fruit and vegetable processors, and is designated with SIC number 1032.

Trends both within and between these industries are outlined by the data on them presented in Tables D.2.6 through D.2.9 . In 1984, the latest year for which statistics were available, the Canadian fruit and vegetable processing industry shipped goods of its own manufacture worth $2.3 billion, or about 6 per cent of the shipments of all Canadian food and beverage industries. There were 224 establishments employing 12,956 people, distributed as shown in Table D.2.6. The 99 establishments and $1.2 billion in total shipments of the Ontario fruit and vegetable processing industry made it the most important province in Canada for fruit and vegetable processing, representing almost 50 percent of the Canadian total, including canners and preservers and freezers.

The Ontario statistics also show that the canning and preserving industry had about three times the volume of the freezing processors, demonstrating the greater importance of the canners and preservers over the the freezers. Canners and preservers had almost seven times the value of shipments and nearly six times the value added as freezers, and nearly five times as many production employees and six times as many establishments. While the canners and preservers share of the industry remained much larger, the freezers were, however, favored by growth. Between 1980 and 1984, the freezers grew in numbers of establishments and employees as the numbers of canners and preservers shrank. Between 1980 and 1984, shipments and value added measured in constant dollars grew 1.2 times and 14 times as fast in freezing as in canning and preserving (Table D.2.7).

Together the British Columbia and Québec fruit and vegetable processing industries (Tables D.2.8 and D.2.9) made up about 25 per cent of the Canadian industry in 1984; Québec was the strongest of the two in canning and preserving, while British Columbia was the strongest in freezing. Not enough data was available to comment on industry growth in Québec, but in British Columbia the growth rate in both sectors was much lower than that experienced in Ontario.

2.C. Trade in Fruits and Vegetables

Ontario is a major trader in fruits and vegetables and their preparations. It is much more important as an importer than it is as an exporter, importing $908 million dollars worth and exporting $127 million of these products in 1985 (Tables D.2.10 and D.2.11).

Looking at fruits and their preparations, the balance between imports and exports is strongly in favour of imports, with the value of imports at $595 million exceeding that of exports at $20 million by about 29 times. The United States has been the major source of imported fruits, providing an increasing amount of imports which has risen from $290 million in 1981 to $365 million in 1985 though its proportion of Ontario's fruit and fruit preparations imports fell over the same period from 67 percent to 61 percent of these imports. The United States has also been the major export destination for the minimum amount of fruit and fruit preparations exported from Ontario, taking around 62 percent or $10 million in 1981, rising to 83 percent or $17 million in 1985.

Looking at vegetables and their preparations, Ontario is again a net importer of these products but its trade in them is more in balance as Ontario imports less and exports more than in the case of fruits and their preparations — imports are only three times greater than exports. The balance of trade in vegetable products has been deteriorating, however, as exports were relatively stable between 1981 and 1985 at around $105 million while imports of these products increased over this same period from $249 million to $313 million. The United States was again Ontario's major trading partner, taking 54 percent or $58 million of its exports and providing 80 percent or $250 million of its imports in 1985.

Section 3 - The US Horticultural Industries

In this section, data on the fruits and vegetables produced and processed in the United States in direct competition with Canadian fruits and vegetables are given. As was the case with the Canadian statistics presented in Section 2, these data give an indication of the size and location of both the production and processing industries.

3.A. Fruit and Vegetable Production

Total fruit and vegetable production in the United States in 1984 equaled $11.4 billion, representing about 8 percent of total US agricultural production in that year. Measured in Canadian dollars, this was almost 15 times greater than the value of Canadian fruit and vegetable production. Alone, fruit production in the United States totalled $5.2 billion in 1984, with orange production, the single largest crop, accounting for over 25 percent of the value. Apples and grapes each contributed about 18 percent of the total value of fruit production, followed by strawberries and peaches with 8 and 6 percent respectively (Table D.3.1). Comparing Canadian and US production of the four most significant fruit crops for Canada (apples, grapes, peaches, strawberries), US production, valued in Canadian dollars, was about 16 times greater than Canada's production. Total US vegetable production in 1984 was $6.2 billion or, valued in Canadian dollars, about 14 times Ontario's production. The most important vegetable was the potato, which accounted for almost 33 percent of the total value of US production in 1984. Tomatoes accounted for 20 percent of the value, and lettuce, onions, and sweet corn were also significant at 11, 7, and 6 percent respectively (Table D.3.2.).

US fruit and vegetable production was located primarily in three regions-- the West Coast states of Washington, Oregon, and California, the Great Lakes states of Minnesota, Wisconsin, Michigan, Indiana, Ohio, Pennsylvania, and New York and the Southeastern states of North Carolina, South Carolina, and Florida. Figures 3.1 and 3.2 show the sites of the principal production of selected fruits and vegetables in the United States. An important point to note in these maps is that much of the US production is at the same latitude as Ontario.

A survey of the statistics for the US crops of the principal fruits grown in Canada (apples, cherries, grapes, peaches, strawberries) is shown in Tables D.3.3 through D.3.7. These tables indicate production nationally and by major producing states, as well as showing allocation of the crops to the processing and fresh markets. The following highlights sum up the data.

- U.S. apple production was concentrated in the state of Washington, which produced almost one-half of the apples for the fresh market. Apple production for processing was more widely distributed, with Michigan, New York and Pennsylvania as well as Washington state heavily involved.

- Location of cherry production varied by end use of the cherries. California's production was significant for the sweet fresh market, but not for the sweet processing or tart processing market, which was located in more northern states.

- Virtually all the U.S. grape industry was located in California, where 90 percent of the U.S. grape crop was produced in 1985.

- U.S. peach production was concentrated in California and South Carolina.

- U.S. strawberry production was divided into two types. Production for the fresh market was centralized in California and Florida, while production for the processing market was centralized in California and Oregon.

Figure 3.1. Location of Major Fruit Producing Areas in the United States

Figure 3.2. Location of Major Vegetable Producing Areas in the United States

A survey of the statistics for the US crops of the principal vegetables grown in Canada (beans, broccoli, carrots, cauliflower, corn, cucumbers, peas, potatoes, tomatoes) is presented in Tables D.3.8 through D.3.16. These statistics indicate production nationally and by major producing states as well as allocation of the crops to the processing and fresh markets. Highlights of the tables follow.

- About one-third of U.S. snap beans produced for processing were grown in the state of Wisconsin.
- The brassica crops (broccoli and cauliflower) were produced primarily in California.
- Carrot production was dominated by the state of California, with Washington and Michigan being the only northerly states with production of any significance.
- Sweet corn production for processing was centered in Minnesota, Wisconsin, Oregon and Washington. Florida, however, figures most prominently in the fresh market for sweet corn.
- Michigan and North Carolina produced the most cucumbers for the pickle market.
- Pea production in the United States was located primarily in Wisconsin, Minnesota and Washington.
- The states of Idaho, Washington, Maine and Oregon were the major producers of potatoes.
- California dominated the production of tomatoes for processing, but Florida was the leading state in terms of production for the fresh market.

3.B. Fruit and Vegetable Processing

As was the case with the Canadian data on this industries, the available statistics for the United States categorize the processing industries by type of process rather than by commodity processed. Table D.3.17 presents the statistics for the number of establishments, employees, total shipments and total value added for the same two processing industries; canners and preservers, and freezers. The data show trends similar to those in Canada – more growth in freezing than in canning and preserving. As was also the case with both Ontario and Canada, the industries each showed greater growth in value added than in total shipments.

In comparison with the Canadian processing industries, the US industries had nine times as many establishments as Canada and produced 19 times the total shipments, measured on a Canadian dollar equivalent basis. This indicates the importance of the very large processing plants in the US processing industries. Factors affecting their relative cost structure and the impact of these differences on competitiveness of the Canadian and US industries will be discussed in Section 5.

Section 4 - Government Policies

This section describes government policies that have affected the current competitiveness of Ontario's fruit and vegetable production and processing industries in both the Canadian and the US markets. The policies discussed here have been introduced to rectify problems experienced in the past. The evidence of the need for and the impact of government policies was provided by interviewees; much of it, however, was anecdotal or emotional, with little support from quantitative or systematic analysis. The result is that much of the information below expresses perceptions rather than facts. Divided into three main parts, the information deals first with federal policies, second with provincial policies, and third with US policies.

4.A. Canadian Government Policies

Canadian policies affecting the horticultural industries are seen as having three general effects -- orderly marketing, structural development, and social welfare. The first, orderly marketing, is an important issue to Canadians because of the enormous size of the United States and its close proximity . Without policies to control the flow of US fresh and processed product into the Canadian market, the following problems are thought likely: 1) occasional disposal of US surpluses of fresh and processed product in Canada, with resultant destruction of market prices in Canada; 2) regular disposal in Canada of US fresh product by US growers who are able to ask prices lower than the full cost of production, since they have already covered most of their costs by sales made before Canadian product is ripe; and 3) entry of poor quality product from the US, causing Canadian consumers to cut back their demand and resulting in depressed prices for good quality Canadian product. The policies which are traditionally seen as contributing to orderly marketing are use of seasonal and other tariffs, dumping duties, surtaxes, grade standards, container standards, packaging and labelling standards, control of imports, advanced crop payments, price support through governmental purchase of product, marketing boards, and price stabilization.

The second effect of Canadian policies is the facilitation of the structural development of Canadian industry. By providing higher prices or lowering the costs of development, policy can encourage the growth of desired industries. The particular practices used on this front are financial assistance for fruit and vegetable storage construction; the regional development act administered by DRIE; Ontario's BILD program; Québec's grants for fruit and vegetable production, marketing, storage, and processing; and temporary tariffs such as that on tomato paste.

The third impact of Canadian policy has been its effect on general social welfare. General policies in this area include taxation, pollution control, and liquor licensing. Specific programs directed at agricultural producers are crop insurance and income security. One might also argue that policies providing for higher product prices provide two further effects, securing a domestic supply of food for Canada while also giving farmers a reasonable income. Both tariffs and marketing boards can also be included here.

Interestingly, in spite of all these policies, the most significant factor affecting the competitiveness of the industries at the present time is seen as the exchange rate. The unprecedented weakness of the Canadian dollar against the US dollar has overwhelmed the effect of policies instituted to deal with problems at a time when the Canadian dollar was stronger. Many of the Canadian policies described below were implemented when the Canadian dollar was stronger, and were used to control imports from the United States. Their effects are included with the general descriptions that follow.

4.A.I. Tariffs

Tariffs on imports of fruits and vegetables and their products are summarized in Table D.4.1. An examination of this table shows that nearly all imports of fresh fruits and vegetables are subject to seasonal tariffs. Only imports of fresh mushrooms, potatoes, and parsnips are subjected to year-round tariffs.

Seasonal tariffs are imposed at different rates, depending on the time of year. The duty rate on each commodity in season is either a specific or an ad valorem tariff, whichever is higher. Usually the specific duty is applied during the major harvest periods and the ad valorem duty is applied over the remaining dutiable period. Outside the dutiable period, no tariff is imposed. In the last few years, seasonal duties on certain items have not been invoked. Of Canada's tariffs on fresh fruits and vegetables, 22 of Canada's are higher, 22 lower, and nine are the same as those imposed by the United States. Beets, cabbage, cauliflower, lettuce, green peas and radishes all carry a higher degree of protection than U.S. rates.

The maximum number of weeks during which the individual seasonal duties are applied is specified in the tariff schedule, but the actual application of a tariff is determined administratively. The present tariff arrangements permit regional autonomy in determining the length of the dutiable period. This provision, based on the premise that marketing seasons vary between production regions, has meant three regions for Canada--the Maritimes, which has the shortest season; the Central Region, consisting of Quebec and Ontario east of Thunder Bay; and the Western Region, which includes Ontario west of Thunder Bay, the Prairies, and British Columbia. Many of the US tariffs are applied over a longer period, sometimes running for the entire year. One issue immediately raised by this system is that improved storage in Canada would extend the market period, and potentially require a longer period of seasonal tariffs for stored commodities.

Seasonal tariffs are seen as helping domestic producers market their product during the local harvest season. They are said to be needed to protect the Canadian market for horticultural products for the following reasons: 1) most horticultural crops are highly perishable and must be marketed when ready; 2) the Canadian harvest season is very short; 3) the markets are extremely sensitive to competitive pressures from the United States; and 4) Canadian production reaches its peak after the peak of U.S. production. Seasonal tariffs are not, however, presently viewed by producers and import brokers as a serious issue , given the weakness of the Canadian dollar. They say these tariffs become important only when the Canadian dollar is worth 85¢ US or more.

Imports of bulk fresh product for processing are subject to tariffs but processors, by meeting certain conditions -- an important one being that the processor legally contracted for his total annual crop requirements -- can obtain a remission in duty through an Order-in-Council. Through this policy, processors who find themselves short of product for processing can import it. Industry people familiar with claims made under the program say the price at the plant less the tariff is nearly always higher than the price the processor has paid for domestic product.

Imports of processed fruits and vegetables are subject to year round ad valorem tariffs. Canadian processors do not see these as having a serious impact given the current exchange rate.

4.A.II. Dumping Duties

The Special Import Measures Act protects Canadian producers from dumping, a practice that has been defined differently at different times. The margin of dumping is usually defined as the difference between the "normal" or current market value in the country of origin and the export price of the product being sold below cost of production. The anti-dumping duty is levied at the time of importation, and equals the margin of dumping. The cost-of-production definition has been used successfully by Canadian potato producers in Western Canada against US potatoes, a move rumored to have upset US producers a great deal.

4.A.III. Surtax

The Custom Tariff Act provides for a surtax to be applied at a rate greater than the existing rate of duty or, in the case of goods not dutiable, a rate not exceeding 33 percent ad valorem. In applying the surtax, the government monitors import prices of ten specific or "fast track" commodities. If the f.o.b. price falls below the benchmark price equal to 85 percent of a moving three-year monthly average or 90 percent of a moving five-year monthly average, the Minister of Agriculture may recommend a surtax to make up the difference. The Minister of Finance must decide within seven working days whether or

not to apply the surtax, which is the difference between the moving average price and the import price. For commodities not listed previously but designated by the Minister of Agriculture following a request by industry, the Minister of Finance has 20 working days to make a decision.

The surtax is used to guard against destabilizing of the market by low-priced imports through the tactic of bringing their prices up to the base price determined on the basis of the moving average. In recent years, Canada applied the surtax only once, using it on yellow onions entering Canada west of Thunder Bay during 1982-83 -- a decision said to have cost US producers $US 412,000. General opinion holds that the Canadian government has not used the surtax extensively for two reasons. First, the government has wished to avoid the complaints of trading partners. Second, the need to use it on fresh produce apparently cannot be determined in time for the government to apply it before the crop season is over and the problem disappeared.

4.A.iv. Canada Agricultural Products Standards Act

The Canada Agricultural Products Standards (CAPS) Act of 1970 is a key act in the regulation of the Canadian horticultural industry. It serves as the basis on which Agriculture Canada regulates the industries. Under this act, Agriculture Canada has established national grades and standards for fresh and processed fruits and vegetables moving both interprovincially and internationally. Details of the specific regulations are most easily considered under the three following headings:

4.A.iv.a. Grades

Fresh produce sold or offered for sale in Canada must meet minimum grade requirements set by Agriculture Canada. These have been set for apples, apricots, asparagus, beets, brussel sprouts, cabbage, cantaloupe, carrots, cauliflower, celery, cherries, corn (sweet), field and greenhouse cucumbers, grapes, head lettuce, onions, parsnips, peaches, pears, plums, prunes, potatoes, rutabagas, and field and greenhouse tomatoes. All imported crops must meet these minimum grade standards. While all the above crops are expected to meet grade and container requirements set by the regulations, direct inspection by Agriculture Canada is applied to apples, onions, potatoes, and field and greenhouse tomatoes being shipped out of Ontario.

The minimum grades are seen by domestic producers as having set high quality standards for produce in the Canadian market. Some growers argue, however, that Canadian officials are not as rigorous as they should be in checking foreign product entering Canada and allow in product that does not meet the standards. The United States, on the other hand, has complained about the restrictiveness of the large number of minimum grades in Canada , especially since it has minimum grades for only onions, potatoes, and field tomatoes -- all crops under market orders.

4.A.iv.b. Container Standards

Agriculture Canada has specified container standards for both fresh produce and processed products. While the container regulations on fresh produce are for table-quality produce, all fresh produce falls within the scope of the regulations. Thus the movement of processing crops is also controlled by the regulations. Specific aspects of container regulations fall into two areas, bulk shipments and retail packages.

Bulk shipments

Bulk bins and trucks are not considered standard containers under the packaging regulations. As a result, bulk shippers require authorization to move shipments, either interprovincially or internationally, whether for processing or for repacking for retail sale. The Minister of Agriculture provides easements, or a waiver from these rules, once the Agricultural Products Board has determined that equivalent product of acceptable quality is not available locally, provincially, or interprovincially.

Potatoes and apples account for about 90 percent of the bulk shipments, although the policy also has some effect on pears, chopped lettuce and carrots. Bulk shipment of apples between Ontario and the United States occur frequently, because different varieties of apples are grown in different areas -- bulk shipments of Macintosh apples go from Ontario to the United States while other varieties are imported from the United States. Potatoes are imported in bulk, coming from Virginia prior to the Ontario harvest; however, once Ontario's crop comes to market, Virginia's bulk shipments are no longer allowed. When bulk shipments are not allowed, some product is packed in retail containers, moved into the provinces, and then processed or repackaged, but this is awkward and costly for those using non-local product.

The stated advantages of shipping in bulk are several. With potatoes, shipping in bulk allows the shipper to salvage good potatoes from those that have spoiled; higher quality at the start seems necessary to maintain the product when it is bagged. As well, those shipping in bulk can load potatoes directly onto trucks in the field, keeping down costs, while also being able to ship lower quality .

Control of bulk shipments is seen by producers as keeping the market orderly by preventing shipments when local supply is in surplus and enabling shipments when local supply is in shortage. This policy also has been used by provinces within Canada to prevent interprovincial movement of product. It has prevented, for example, bulk shipments of potatoes from New Brunswick, and some shipments of Ontario produce to Western Canada.

Retail package standards

Standard retail packs are provided under the federal regulations. Agriculture Canada sees standard packages as desirable because they facilitate comparisons by consumers. They also reduce the number of containers that must be handled, allowing container manufacturers to pursue available economies of scale, and reducing the inventories of containers that must be stored. The United States has complained about these regulations, however, because it does not regulate containers.

Federal regulations set specific container sizes that can be used to sell as fresh product either international or interprovincial shipments of produce. But shipments packed in provincially authorized containers which may not meet federal standards are not restricted entry into any province either from other provinces or other countries as local regulations are given precedence.

Canada also specifies containers sizes for canned and frozen fruits and vegetables, although container size for any other category of processed food is unregulated. The regulations specify both the dimensions of the allowed cans and the manner of declaring the net quantity of food in each of the can sizes. In Canada, only 28 can sizes are permissible, and each container size is permissible for only certain products. Larger size containers may be produced, provided the Minister of Agriculture approves the labels. Fruit and vegetable canners in both Canada and the United States say this regulation is a significant factor in preventing periodic entry of US canned product into Canada. It blocks the can sizes that dominant US packaging, in particular the US 303x406 one-pound fruit and vegetable can as well as the important 211x300 and 211x304 cans.

These regulations effectively prohibit spot sales of US product in metal cans in Canada even when they would be justified on the basis of price and quality. Only if product has been canned specifically for the Canadian market is it able to meet this requirement. Products packed in glass are even more protected than those in cans, since glass containers must all be metric ("hard metric"), whereas nonmetric cans are allowed. The regulations do not, as a rule, limit imports of frozen fruits and vegetables, since most of these imports are packed in bulk totes which are later repacked in retail packages.

4.A.vi.c. Content Requirements

Most product content requirements are determined under the various sections of the CAPS Act. Quite a number have been set through industry-Agriculture Canada consultations; others reflect what consumers expect in products, such as the requirement that whole-pack tomatoes be packed in their own juice, and that tomato juice be made from fresh tomatoes and not reconstituted from paste.

Canadian processors complain that some imported products do not meet Canadian content requirements, and that these products are not caught on import because inspection is not conducted until the product is on the retail shelf, when it is carried out only in a limited manner. A major problem connected to this is that, in order for these standards to be enforced, the government must provide evidence that will stand up in a court of law. Recently, tomato processors worked with the government to develop a defensible test to determine if imported whole-pack tomatoes had been packed in juice or water. Often, though, such evidence is difficult to provide even when the government suspects that the standards are not being meet. In these cases, the government writes to the importer or processor, asking that government standards be followed.

4.A.v. Import Shipments

Regulations 56 and 57 of the Fruit, Vegetable and Honey Act -- the only two regulations from the original act still standing -- require the importer, of an imported fresh fruit or vegetable that is also grown in Canada, purchase the good no later that 24 hours after moving from its point of production. This regulation effectively prohibits the importation of fresh fruits and vegetables into Canada without a prearranged destination. This policy is seen by Canadian growers as helping create a more orderly marketing situation since it limits the entry of produce without a definite market. Some feel that entry of such produce would destroy fresh produce markets, although no one has solid quantitative analysis to prove that this would happen. When crops are in short supply, the applicability of this policy is less evident because US sellers can then get a firm price for their produce. The regulation makes some US producers unhappy, however, because it limits their ability to ship produce into Canada while Canadian shipments freely enter the United States. Other US producers like the policy because they have a firm price when they ship to Canada.

The future of this policy is already in question. The Standing Joint Committee of the House of Commons and the Senate on Regulations and Other Statutory Limitations has questioned the legal basis for the regulation. It has said that this regulation deals with trade, and that the CAPS Act does not provide enabling power for such a policy. The repeal of the regulation has been requested, and at present it is not being enforced.

4.A.vi. Pesticide Standards

Some industry people feel that both the Canadian and the US governments have been using pesticide regulations to limit trade. As of yet, no one has examined the impact of differing pesticide restrictions on fruit and vegetable trade; to do so would require enormous amounts of work since the acreage of each crop as well as the size of the treated acreages would have to be examined. A related issue that industry representatives raise is the issue of pesticide residue. Producer representatives say that, when residue is found, the press picks up the story and blows it out of all proportion. These articles distress consumers, who then refuse to buy the product out of fear for their safety. In the short run this situation hurts growers, wholesalers and retailers, who must all dump their product, and in the long run it hurts the whole industry by decreasing overall demand.

4.A.vii. Packaging and Labelling

The Consumer Packaging and Labelling Act addresses the packaging, labelling, sale, importation and advertising of pre-packed food products. Administration of this act is officially the responsibility of Consumer and Corporate Affairs; but, through a memorandum of understanding, Agriculture Canada now handles all but retail inspection of products. To simplify the clearance process for processors, Agriculture Canada provides approval of labels for the needs of both Consumer and Corporate Affairs and Agriculture Canada.

Labelling requirements have kept some importers out of the Canadian market, since the market does not seem large enough to justifying maintaining an inventory of bilingual labels. Some small importers have been allowed product exemption under the act. Canadian food processors remain concerned that the number of imported products not meeting Canadian labelling requirements is

increasing. Labels often have no translations or use inadequate formats; varying weight declarations may provide offshore manufacturers with a competitive advantage. Occasionally a US processor complains about the regulation, but most Canadian experts see no distinct threat.

4.A.viii. Exchange Rate

The value of the Canadian dollar in US dollars is the result of numerous factors, including monetary and fiscal policies in both countries and, also, the market psychology of investors. The net impact of these factors over the past decade has been a decline in the value of the Canadian dollar against the US dollar. Thus, production costs in Canada have fallen against US costs when measured in Canadian dollars. This decline in Canadian costs has been offset to some extent by the greater increases in the relative prices of Canadian inputs, and by the higher cost of inputs imported from the United States for use in Canadian production. These increases have offset some of the price advantage conferred by a weaker Canadian dollar.

Virtually everyone in the industry cites the exchange rate as the reason that more fresh produce is not imported from the United States, and as the reason that the branch plants of US processors are still operating in Ontario. The inescapable conclusion seems to be that the value of the CDN$ is the single most effective measure of protection at present.

4.A.ix. Commodity price stabilization

The Agricultural Price Stabilization Act, first introduced in 1958 and then revised in 1975, enables the Agricultural Stabilization Board to use deficiency payments to support the farm price of a set of named commodities. The formula is based on a minimum of 90 per cent of the average price in the preceding five years relative to the average cash costs in the previous five years, adjusted for changes in cash costs in the year of support. Fruits and vegetables are not named crops under the Act, but they may be designated for support from time to time. In general, fruit and vegetable prices supported under the Act are said to be supported at more than the 90 per cent level, since that is seen as too low to be acceptable support. Fruits receiving support between 1980/81 and 1984/85 were apples ($36.6M), apricots ($0.1M), pears ($0.7M), prune-plums ($0.1M), and sour cherries ($2.9M). Vegetables receiving support over the same period were cabbage ($2.0M), carrots ($4.7M), cucumbers ($6.2M), onions ($1.8M), potatoes ($16.4M), rutabagas ($0.6M), and tomatoes ($0.5M).

4.A.x. Product price stabilization

The Farm Products Board Act, the enabling legislation for the Farm Products Board, is very similar to that of the Agricultural Stabilization Board; and, the two boards share an administration. The act allows the federal government to purchase products, often processed, which have no other market or would be destroyed. Whether the market support is provided for the raw commodity through the Agricultural Stabilization Board or for the product through the Farm Products Board is a complex decision based on the cost of each alternative, and on the situation of the processors and their inventories at the time. Usually the government assumes storage costs until the items are offered on the market. Disposal is usually carried out through the domestic market.

At present, each time the decision to support the price of a product is made, the board must receive authorization through an Order-in-Council, which sets a maximum on how much can be purchased for the year in which the Order is given and a maximum loss the Board is allowed to incur through this activity. In recent years, purchases of products have been tied to the local market situation in certain producing provinces, even though sales may be made in other provinces. The Ontario market was affected, between 1980 and 1984, by specific purchases that included apple juice (1984), sour cherries (1980), grapes (1980-1983), and strawberries (1984); similar purchases for vegetables included processed peas (1980), canned tomatoes (1980, 1983), and yellow seed onions (1983). Currently there is a request for the Board to purchase mushrooms. The British

Columbia fruit industry has also benefited from the purchase of prune plums (1980), processed fruits (1982), and canned peaches, canned pears, and raspberries (1984). In 1980 Prince Edward Island benefited from the purchase of stored potatoes.

4.A.xi. Advanced Payment for Crops Act

This program may provide any agricultural producer with interest-free cash advances up to $15,000 per crop. The level of payment is normally set at about one-half the estimated market value of the commodity; and the money is paid after harvest, but before marketing. Funds must be repaid to the Government when the first sales of the stored crop take place, usually no more than 2-3 months following the advanced payment. Request for the program must be initiated by grower organizations. The program , which allows producers to market their produce in an orderly fashion, has made most of its payments for potatoes and apples, though cabbage, carrots, and onions have received some support.

4.A.xii. Crop Insurance

Crop insurance is said to benefit processors who tend to use it as a substitute for investment in plant capacity. Variability in harvest yields seems to lead processors to encourage farmers to overplant so that the processing plant will be able to meet its requirements. If the plant is at capacity at the time a farmer's crop needs harvesting, the processor will bypass harvesting the crop, knowing that the grower will be compensated through crop insurance. Both the grower and the processor contribute to the fund, which means that they are both paying for this practice.

4.A.xiii. Federal Assistance Programs

A wide variety of assistance is provided through federal programs in an equally wide variety of areas. These include productivity, design, counselling, finance, research, export marketing, product innovation, and regional development.

4.A.xiii.a. Regional Development Incentives Act

The federal government has tried to equalize the opportunity for industrial activity between regions by making grants to businesses. The policy has been blamed for creating excess capacity and for distorting interregional competition in the national market as it has been redressing regional economic imbalances. In addition, some industry people feel that these grants have been given to "losers", slowing down the necessary rationalization of processing activity.

4.A.xiii.b. Financial Assistance of Fruit and Vegetable Storage Construction

The Fruit and Vegetable Storage Construction Financial Assistance Program has provided up to one third the cost -- to a maximum of $500,000 -- for the construction of new storage and packing facilities and for the improvement of existing facilities. Funds have been available for the construction of storage by co-operatives but not by processors. Between the start of the program in 1973 and April 1986, Agriculture Canada's contributions under this program totalled $25.54 million, with British Columbia getting $7.68 million, Ontario $5.87 million, and Québec $4.91 million. Actual expenditures on storage and packing facilities were probably greater than three times this amount since not all projects were funded to the full one-third limit. Approximately 80 per cent of the assistance under the program has been provided to increase storage for apples, pears, and potatoes. The remainder was allocated to carrots, onions, rutabagas, parsnips, and cabbage.

Since 1984, assistance for construction has been incorporated in the Canadian Agricultural Market Development Initiative (CAMDI), a program also directed toward developing new crops and assisting trade positions. The budget for this program is, however, less than that previously devoted solely to the construction assistance program.

4.A.xiv. Transportation Regulation

Until 1980, US and Canadian trucking regulations were similar; but the US Motor Carrier Act of 1980 eased significantly the legal requirements to operate broad commodity trucking businesses in the United States, while Canadian transport remained heavily regulated. The heavy regulation of transportation in Canada may mean higher costs for the nation, but Ontario has not had a problem with shipping either in Ontario or to the United States. The obvious advantage is location of much of Ontario's industry close to the US border. The cost of movement between provinces has been affected, although the Atlantic Freight Assistance Act has helped lower the cost of moving product from the Maritimes to Ontario. Québec is rumored to have subsidized transportation to Ontario in the past.

Both the US and Canada limit trucking companies transporting point-to-point within either country by requiring drivers on these routes to be immigrants or nationals of the country.

4.A.xv. Taxation

Taxation does not seem to be a major concern for executives in the processing industry, and is discussed only when directly queried. As a fundamental aspect of investment policy and management in the larger picture for both Canadian companies and Canadian subsidiaries of multinationals, it has, however, specific effects. All these companies state that they will invest where they will make the most money. If Canada has higher taxes, it will attract fewer investments. Companies also point out that personal income tax policy has affected their labor costs. Workers look at their pay check in terms of take-home dollars, and are concerned with keeping up with inflation. Increased wages mean higher personal income tax rates, requests for proportionally more money and, ultimately, higher wage costs.

Taxation questions also involve depreciation policy on orchards and vineyards, which has been a problem in the last few years. Revenue Canada argues that new orchards should be considered a capital outlay; without a provision for depreciation, however, these costs can not be written off. They can be added to the adjusted cost basis of the property, so that they have the potential to reduce capital gains and the amount of tax paid. But this is useful only if the farm is sold – and most are in the family for generations. Another question arises in taxation with the regular replacement of fruit trees and vines; at present, Revenue Canada allows growers to expense trees in the year they are planted rather than capitalize them and then depreciate them over many years.

4.A.xvi. Labor Policy

The specific labor policies in Canada make its situation distinctly different from that in the United States. First, Canada's unemployment insurance and workmens' compensation schemes are more generous and, hence, more costly than their counterparts in the United States. Secondly, the supply of seasonal labor for harvesting is more costly -- or perhaps less productive – than that in the United States because the Canadian government has taken a restrictive view. Arguing that sufficient workers are available in Canada, it refuses to allow Carribean workers to be brought in. Growers argue that Canadian workers are not of the same quality, since they will work neither as hard nor as long as those brought in from the Carribean.

4.B. Provincial Government Policies

Provincial government policy is an important consideration when looking at Canadian policy. It directly affects a wide-ranging group of issues concerned in the national picture.

4.B.I. Provincial Liquor Boards

The role of provincial liquor boards in controlling alcoholic beverages sales has a far-reaching effect. US companies particularly complain about them, claiming that provincial boards either refuse to "list" their products or, where listed, charge discriminatory prices through markups. The boards are seen as, in general, discouraging purchase of US beer, wine, and distilled spirits and offering very limited access to distribution.

4.B.II. Provincial packaging standards

These regulations are seen as being used by some provinces to limit the shipments of other provinces. In 1983, the Québec government gave Ontario producers two days notice that they would not accept metric containers for tomatoes, even thought Agriculture Canada had approved shipment in these containers. Since 15-18 per cent of Ontario's field crop, which is worth $500,000 - $750,000, goes to Québec, this decision had major repercussions. In general, though, provinces are usually consistent with Agriculture Canada's standards.

4.B.III. Pollution control

The location of processors in the densely populated part of Ontario has meant that pollution control has been an important consideration. Some processors say that control standards in Ontario are higher than those of other processing areas and require greater capital expenditure to meet them.

4.B.Iv. Minimum Wage Laws

Provincial policies provide for higher minimum wages in most provinces than do those in most US states.

4.B.v. Marketing Boards

Various provincial marketing boards deal with fruits and vegetables. These boards take differing roles that divide them into three categories: 1) negotiating boards, which cover primarily annual vegetable sales; 2) boards with price setting powers, such as the ones for tender fruits in Ontario; and 3) price-setting and supply allocation boards such as the fruit boards in British Columbia and the asparagus board in Ontario. A full understanding of the effect of boards can be developed only through detailed analysis of each board, since the powers of each board can vary considerably, a task well beyond the scope of this study; it is appropriate here, however, to look at the fruit and vegetable marketing boards in Ontario, which include the following:

1. Ontario Asparagus Growers' Marketing Board, London;
2. Ontario Berry Growers' Marketing-for-Processing Board, Waterford, dealing with strawberries and raspberries for processing;
3. Ontario Fresh Grape Growers' Marketing Board, Vineland Station;
4. Ontario Fresh Potato Growers' Marketing Board, Burlington;
5. Ontario Grape Growers' Marketing Board, Vineland Station, dealing with grapes for processing;
6. Ontario Greenhouse Vegetable Marketing Board, Leamington, responsible for tomatoes, cucumbers, and lettuce grown in greenhouses and going to the fresh market;
7. Ontario Potato Growers' Marketing Board, Burlington;
8. Ontario Processing Tomato Seedling Plant Growers' Marketing Board;
9. Ontario Tender Fruit Producers' Marketing Board, Vineland Station, dealing with peaches, pears, plums, and cherries (sweet and sour); and
10. Ontario Vegetable Growers Marketing Board (OVGMB), London, responsible since 1985 for the regulation and control of processing vegetables in Ontario, including green and wax beans, lima beans, red beets, cabbage, carrots, cauliflower, corn (sweet), cucumbers, green peas, peppers, pumpkins and squash, and rutabagas.

Producers see marketing boards as essential, serving many useful purposes such as setting standards and promoting sales. They also feel that marketing boards are needed to give all producers a fair price and to counter the bargaining power of the few processors and retail chains. Representatives from the marketing boards that influence price argue that the price they obtain for growers is "fair" when it is compared to the price for which produce can be brought into Canada. Overall, producers see marketing boards as an integral part of rural Canada's economic and social fabric that should should not be eliminated.

Processors criticize the boards, however, blaming them for produce prices considerably higher in Canada than in the United States. In Ontario the high prices for vegetables are seen as the result of the dramatic increase in grain prices in the mid-seventies, when processors had to raise contract prices in order to attract farmers into growing the desired acreages of vegetables. Now, even though grain prices have dropped, the prices paid for processing vegetables have not. Processors blame this on the way prices are negotiated and on arbitration procedures. On the other hand, high prices for fruits in Ontario are recognized as necessary given the high cost of production created by the high cost of the land and the difficult climate. Still, for nearly all processed commodities, processors argue that growers have been able to set prices so high that they limit the ability of the processors to compete.

4.B.vi. Business and Industrial Leadership and Development (BILD) Program, Ontario

A program that ran between April 1982 and July 1985, the BILD program had as its purpose the encouragement of import replacement and export creation. It accomplished this by providing grants to assist farmers and processors in improving processing and storage capacity. The projects funded dealt primarily with the fruit and tomato paste industries. The program has been discontinued.

4.B.vii. Grants for Fruit and Vegetable Industries, Québec

The province of Québec has provided grants in the past to both its vegetable producers and processors. Grants available for vegetable producers included two major schemes: the first is a grant of 25 per cent, to a maximum of $500,000, of the cost of building local centers for grading, sizing, and packaging, and was limited to producer groups, cooperatives and corporations of at least 15 farmers; the second involves grants covering post-harvest handling, grading facilities and equipment, and will provided 50 per cent of the cost of machinery suitable for crop handling, grading, sizing and packaging and 33 per cent of the cost of constructing or modernizing buildings containing packaging lines, up to a maximum determined by the number of applicants--$25,000 for one or two, $35,000 for three or more, $200,000 for cooperatives. Grants available for vegetable processors for post-harvest preservation and storage included a grant of 50 per cent of the cost of purchase, installation, or construction of various cooling systems; a grant of 50 per cent, to a maximum of $40,000 for the installation of refrigeration and cooling facilities; a grant of 50 per cent , to a maximum of $30,000 for the modernization of refrigeration and cooling facilities; and a grant of 50 per cent for the installation of ventilation and refrigeration in storage facilities, to maximums of $15,000, $100,000, or $300,000, depending on individual cases. These grant programs, discontinued since the new provincial government took over in 1985, have led to considerable expansion in vegetable production and processing. Québec is now said to have some of the finest cold-jacket storage for fresh vegetables in Canada.

4.B.viii. Income Support, British Columbia

British Columbia has operated an income support scheme through which vegetable growers can receive payments if prices fall below 100 per cent of estimated production costs. Producers share equally with the provincial government in the cost of the program.

4.C. United States Government Policies

The number and types of federal programs available to growers varies by state. The following are principal programs affecting the production of fruit and vegetables in the United States:

4.C.I. US Federal Marketing Orders

US fruit and vegetable orders are administered under the Agricultural Marketing Act of 1937. The orders, issued and supervised by the Secretary of Agriculture, obligate first buyers of fruits and vegetables to follow specified trade practices and restrictions on sales. Section 8E of the act requires imports of designated commodities to meet the same or comparable grade, size, quality, and maturity standards as imposed by the orders on domestically produced products.

Orders are conceived primarily as a tool for establishing and maintaining orderly marketing conditions and establishing parity prices for farmers. The orders allow an industry to attempt to regulate the handling and marketing of its crop by minimizing the erratic flow of product to market, preventing low quality product from depressing prices, standardizing containers, and correcting other marketing problems. Each marketing order applies to a designated commodity produced within a specific area. Federal orders covering commodity types also grown in Ontario are applied to peaches (California, Georgia, Colorado, Washington), sweet cherries (Washington), tart cherries (eight states), potatoes (Idaho and East Oregon, Washington, South Oregon and North California, Colorado, Maine, Virginia and North Carolina), onions (Idaho and East Oregon, South Texas), and tomatoes (Rio Grande Valley of Texas, Florida).

The order s for all the produce listed have grade and size regulations, and permit pack and container standardization. The onion orders also affect market flow through shipping holidays. In addition, the potato, onion and tomato orders require that imports meet the same or comparable standards as domestic product under Section 8E of the Act. The standards are intended to prevent shipment of low quality produce from spoiling the consumer's image of the product. Few complaints have been registered in recent years about these standards being used to discourage imports.

4.C.II. Irrigation

The Bureau of Reclamation (USBR) of the US Department of the Interior provides irrigation services to approximately 10 million acres of the 17 western states. Approximately 1/3 of the vegetables and 1/4 of the fruits and nuts grown in the US are grown on land served with USBR water. The value of the subsidy provided by this program is difficult to determine, but it has lowered considerably the cost of water for some producers.

4.C.III. Trade Policy

Various trade measures used by the United States have affected the ability of Canadian producers and processors to compete in the US market. Trade policy has been executed through tariffs, various duties and quota-style arrangements. Other protection in place includes Section 22 of the Agricultural Products and Commodities Act of 1937, and a variety of import documentation and customs valuation practices.

Tariffs on fresh fruits and vegetables tend to be legislatively determined and tend to last longer than those of Canada while on most processed fruits and vegetables they are 17.5 per cent. Various acts enabling administrative action against imports are Section 301 of the Tariff Act of 1974, the US Antidumping Act, Section 337 of the Tariff Act of 1930 , and Escape Clause Action. Canadians argue that the system allowing use of these policies is too politically oriented and that it allows those in the US to seek the application of one measure after another in the search for a method of limiting or taxing imports rather than to pick one measure and arguing the case only once.

Section 22 of the Agricultural Products and Commodities Act of 1937 authorizes the President to regulate imports of agricultural products which materially interferes with any domestic production or market control program, price support, or other program or operation relating to agricultural commodities. This is applicable to the onion, potato, and tomato market orders. Finally, import documentation and customs valuation practices can be used to limit trade although the way this is done is not obvious. The US claims that it lets Canadian shipments of fresh produce enter the United States even without the complete documentation required. There are also claims that tariffs assessed may not reflect the tariff item classification, hence increasing the value of the commodity and increasing the cost to the buyer. This has been a problem in several instances. In one case, a US customs agent weighed consumer packs of carrots and found they weighed more than was claimed on the pack. As a result, he added on a 10 per cent tariff . When the method of levying duties is not uniform, fair, and predictable, it acts as a nontariff barrier to trade.

The use of policies to limit US imports of Canadian horticultural produce and products is relatively new and has grown out of the lower value of the Canadian dollar, a situation that has permitted Canadian producers to penetrate the US market. US producers of fresh produce in the northeast are unaccustomed to seeing Canadian produce flow into the United States, and strongly resent it. Processors of products also resent imports at a time when they are looking for company growth but are operating in a mature market. Both US producers and processors are looking for ways to limit these incursions by Canadians into their market.

4.C.iv. Grades and Standards

The US honors the Canadian grading system for fresh produce. Fresh produce is allowed into the US when accompanied by a grading certificate stipulating that the Canadian product meets comparable US grades for the product. The United States claims that entry is seldom denied, even though the certificate required is not included. Food and Drug Administration inspectors at various custom ports randomly sample entries to examine physical appearance of the product at time of entry and, when suspicions warrant, conduct laboratory analysis for possible adulteration from substances such as pesticides

The US inspectors sometimes seem to be politically motivated in the application of these rules. Smaller companies exporting to the United States feel they have been subject to greater amounts of inspection and to failing more tests when they use certain border crossings points or ship higher volumes than usual. The large multinationals do not report such problems.

4.C.v. Phytosanitary Standards

The United States has occasionally used phytosanitary standards to restrict or discourage the movement of fresh produce from Canada into the United States. Such problems usually occur when the US crop is in season.

4.C.vi. Taxation

The tax systems of the two countries differs quite sharply. In particular, the US tax system has encouraged the expansion of production of orchard fruit -- grape production in California, apple and grape production in Washington, and cherry production in Michigan. The exact nature of the advantage is difficult to determine because the tax law is complex and exemptions vary, depending on whether one is an operating farmer, a non-management investor, or a corporation. Under certain circumstances the investment in developing orchards can be capitalized and depreciated over five years,once the orchard is in production. These investments include nearly everything but the land. Furthermore, capital losses during development can be subtracted from other income for federal tax purposes.

Some of the tax shelter advantages have, of course, been diminished in the 1986 tax package. For example, one tool which has been very important to processors in raising low-cost financing in the past has been industrial revenue bonds issued by local governments. But the 1986 tax package has cut down their significance for the future markedly.

4.C.vii. State Marketing Programs

States have various programs that are equivalent to or affect markets for Ontario product. The following is a random sample of specific programs: Florida has used grading standards to exclude Mexican produce, New York and Illinois provide for state promotion of produce, Wisconsin provides technical assistance and seed money to producers of commodities needing help, and Wisconsin, New York, Michigan and Illinois all provide help in developing export markets. Specific information on these programs is available through individual state Departments of Agriculture.

4.D. Summary

This section has described government policies that have affected the current competitiveness of Ontario's fruit and vegetable production and processing industries both in the Canadian and the US markets. The policies discussed here were all originally introduced to rectify problems experienced in the past. The evidence of the need for and the impact of such policies is not, however, supported by much quantitative or systematic analysis, since it was largely provided by interviewees and tended to be anecdotal or emotional.

The information is divided into three main parts, one dealing with federal policies, a second with provincial policies, and a third dealing with US policies. Federal government policies affecting the horticultural industries were seen as having three general effects: orderly marketing, structural development, and social welfare. Orderly marketing is an important issue to the Canadian industry because of the enormous size and close proximity of the US; facilitating the structural development of Canadian industry is of less importance. Finally Canadian policy has sought to improve general social welfare. In spite of all these policies, the most significant factor affecting the competitiveness of the industries at the present time is the exchange rate. The unprecedented weakness of the Canadian dollar against the US dollar has overwhelmed the effect of policies instituted to deal with problems at a time when the Canadian dollar was stronger. Many of the Canadian policies identified were implemented when the Canadian dollar was stronger and were used to control imports from the United States. Now the weakness of the Canadian dollar and concerns in the United States over that country's imbalance in trade are leading it to use various policy interventions to limit imports into the country.

Section 5 - Competitiveness

This section compares the competitiveness of Ontario's fruit and vegetable production and processing industries to that of the US industries. Divided into three parts, the discussion first defines the meaning of competitiveness adopted in this study, which is necessary since competitiveness means different things to different people. Then competitiveness is examined from both a macro and a micro perspective. The former shows the general features of competitiveness, while the latter provides a detailed understanding of specific factors -- influential both through direct distortion of costs and through the basic characteristics of the activities -- important in explaining competitiveness. These factors will be examined in production and in processing. Differences between Ontario and US competitors which affect competitiveness will be identified throughout the discussion.

5.A. The Meaning of Competitiveness

The term "competitiveness" is used differently by different people. For this study, competitiveness is defined as the ability of Ontario producers and processors to compete with others in the markets for their fruits and vegetables and their products. Another necessary definition is that of the term "market", which must be defined to assess competitiveness. One of the broadest definitions of the market is that based on the use of industry statistics collected under the Standard Industrial Classification (SIC) system. Under this approach, information is collected on broadly defined industries which produce a range of products. Competitiveness is then examined by comparing the statistics on these industries either between countries or between regions. The implicit assumption in these comparisons is that the relevant market includes those two regions for which the statistics are being compared. We call this approach the macro approach to examining competitiveness.

A narrower approach to assessing competitiveness involves defining the market market in the more restricted terms of the three economically defined dimensions of space, form, and time. Space is the geographic dimension of a market, form that dimension which the product takes when it comes into competition with products of other producers or processors, and time the period during which the product faces competition. The exact specifications for examining the competitiveness of particular fruits and vegetables when assessing competition in a narrower sense derive from knowing that much of the competition in agricultural products is based on price; products coming from different producers and processors are seen as very similar. Competitiveness determined by price is, in turn, based on total cost. Total cost is the sum of all elements affecting cost; and, while it is compounded of a number different items, it is the final sum of all -- the total cost -- rather than one particular one that determines competitiveness.

Let us now consider how the various factors affect competitiveness in a narrowly defined market by using a hypothetical case. Suppose we have an Ontarion market for a processed product which is sold throughout the year. Ontario product faces competition in this market from product coming from California and Wisconsin. The average cost structure of the competitors from the three regions is presented in Figure 5.1. From this figure, we can see that California has the lowest cost of producing the fresh produce and then processing this fresh produce into product, while Ontario has the highest cost for both activities. Yet Ontario product is competitive in the Ontario market because the cost of transporting product within the Ontario market is lower than the cost of transporting it from Wisconsin to the Ontario market and much lower than the cost of transporting it from California to this market. Thus, Ontario product is competitive in the Ontario market, even though Ontario producers and processors have higher costs. In effect, there is a natural protection provided by transportation costs which serve to raise the cost of California and Wisconsin product entering the market.

Looking at the hypothetical case, we can readily see that each activity that a competitor has to perform adds to the cost and affects his competitiveness in a particular market. If that competitor has to perform more activities than his competitors, he may be at a competitive disadvantage because these extra activities drive up his costs. If he has to pay more per unit of activity or if he needs to do more of that activity per unit of output, his cost in performing that activity may also drive up his cost and decrease his competitiveness.

Figure 5.1. The Cost Structure of Different Competitors Serving the Ontario Market

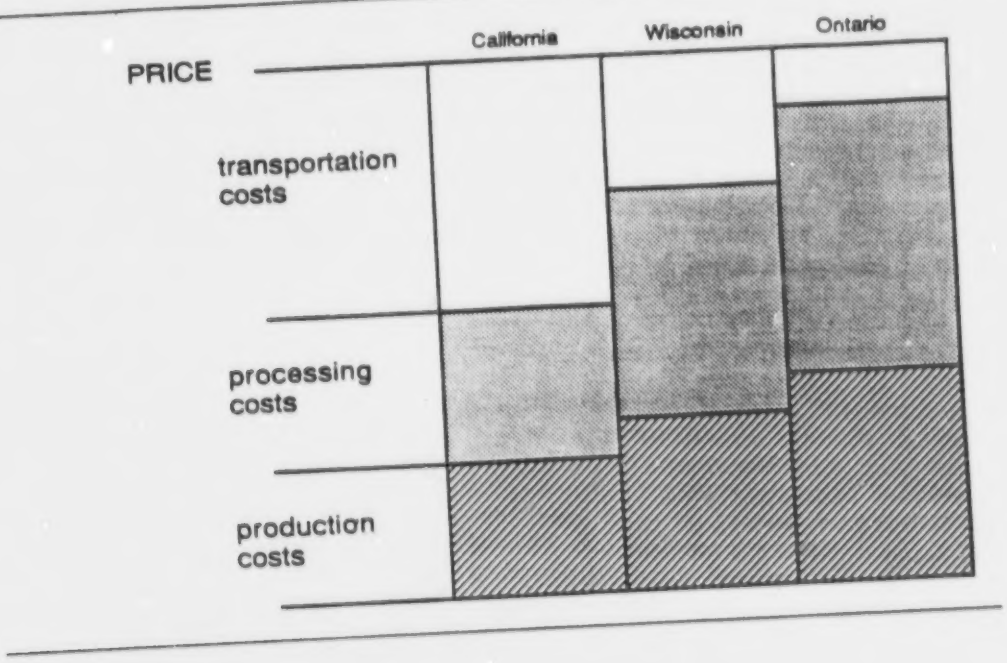
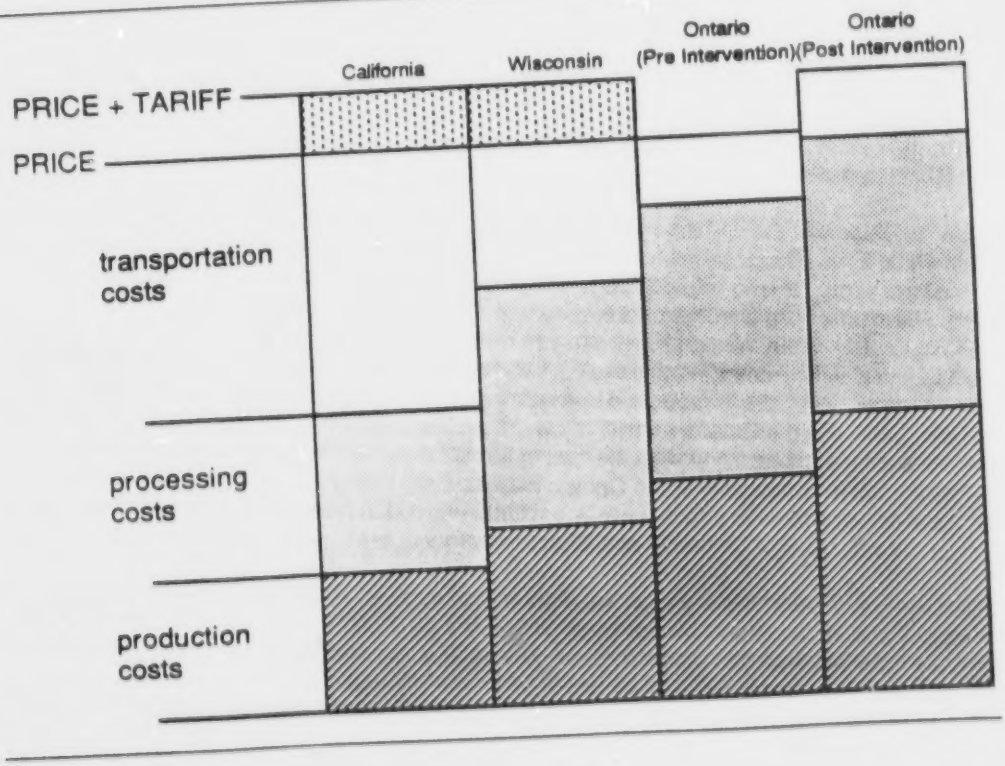


Figure 5.2. The Cost Structure of Different Competitors Serving the Ontario Market After Government Intervention



Not all factors affecting competitiveness are due solely to economic costs. Sometimes government policies affect competitiveness, a situation demonstrated by the data laid out by Figure 5.2. Suppose the government of Canada decides to intervene in the markets. It imposes a tariff on imports from the United States. This adds a new cost to the California and Wisconsin product entering the Ontario market that must be recovered in the market place if the two are to continue to serve the Ontario market. The higher cost of the imported product allows the price of product in the market to rise. This higher price will be absorbed by the various activities that are performed in producing the product. Suppose that, at the same time the government imposes the tariff on the product, it also introduces a marketing board that raises the price of agricultural product used by the processor in a way that causes all of the increase in product price allowed by the tariff to be captured by the producer through charging a higher price. The net results are that the Ontario product is still competitive in the Ontario market, that the Ontario processor still recovers his costs as before the tariff, and that the Ontario producer receives higher prices, possibly more than covering costs compared to the pre-intervention situation. This is basically what has happened as a result of Canadian federal and provincial government intervention.

This hypothetical example leads to several questions in assessing competitiveness: What additional activities may Ontario producers and processors have to pursue that their competitors do not have to pursue? What activities do both Ontario producers and processors and their competitors have to perform that are higher cost in Ontario? And, what effect have government policies had on prices in the markets and the costs of performing particular activities? To answer these, we can now examine competitiveness in terms of macro and micro aspects. The macro analysis will analyse competitiveness at the industry level, using government statistics. The micro analysis will deal with specific factors that affect competitiveness at the company and commodity levels.

5.B. Macro Competitiveness

Analysis at the macro or industry level permits a general assessment of the competitiveness of the horticultural industries. This analysis is limited, however, by the availability of government statistics on the industries. Information, in general, is not gathered specifically on the fruit and vegetable production industry since they make up only part of the several enterprises conducted on the many farms. This makes it impossible to talk about the competitiveness of production. Analysis of the competitiveness of the processing industry is possible, however, because there are specialized businesses engaged in fruit and vegetable canning and freezing establishments from which the government collects and then aggregates a set of industry statistics. We do have to recognize that these figures also incorporate other specialized processors such as pickling, drying and frozen specialty firms. Still, different measures of competitiveness which can be determined from these statistics include factor productivity, wage trends, market share, and capacity utilization.

Factor productivity measures the amount of output per unit of factor input, a process conducted, for the purpose of standardization, in dollars. Evidence of a competitive industry is based on having higher dollar productivity than its competitors. Table D.5.1 presents 1984 data on the labor productivity of Ontario and US canners and preservers, and freezers. In the case of canners and preservers, the US plants produce shipments per person hour worth about $26 more or 25 percent greater than their Canadian counterpart. Value added is also higher per person hour by over $11. -- 26 percent greater. Canadian frozen food manufacturers fare even worse when compared with their US counterparts. Shipments per person hour are $31 higher or 45 percent greater for US firms and value added is $12 or 34 percent higher per person hour. Overall, US fruit and vegetable canners and freezers appear to have a competitive advantage over Canadian plants with respect to labor productivity. A partial explanation for this could be the younger age of US plants and equipment, as well as the greater specialization of US plants, which means that they can use less equipment for a greater part of the year. The US plants are also larger on the average, and tend to have less idle capacity in proportion to fixed capacity.

Differences in labor productivity can be offset by differences in wage rates. The magnitude of differences discussed above and displayed in Table D.5.1, however, clearly are not offset by a lower Canadian wage rate.

Data on capacity utilization shows that Canadian food processors have been operating at some 80 per cent capacity over the past few years. The Canadian industry generally accepts that the US food processing plants have a great deal of excess capacity.

A final measure of macro-competitiveness for the industry is found in the product self-sufficiency ratios. These ratios indicate how much of Canada's domestic demand was supplied domestically. Self-sufficiency ratios for fruits are presented in Table D.5.2 and for vegetables in Table D.5.3. For fruits, Canada was self-sufficient in processed apple products and was a net exporter in fresh apples. Canada was not self-sufficient in fresh peaches and strawberries, because of the seasonal nature and the perishability of these crops; it was even less self-sufficient in processed peaches and strawberries. For vegetables, Canada was more than self-sufficient in and, hence, an exporter of beans, corn, and peas. It was not self-sufficient in and, hence, an importer of fresh and frozen broccoli, canned and frozen carrots, fresh and frozen cauliflower, onions, canned mushrooms, canned tomatoes and tomato paste. On balance, Canada appeared more competitive in vegetables that fruits.

5.C. Micro-Competitiveness

The competitiveness of Ontario's industries as captured in the macro measures is determined by a host of micro factors. We will now turn to a detailed examination of micro-competitiveness. The first part, 5.C.i., looks at competitiveness in markets for specific Ontario commodities. Then factors affecting micro-competitiveness are considered. The second part, 5.C.ii., deals with production and is relevant to competition in both the fresh and processed markets. The third part, 5.C.iii., deals with processing, focusing only on factors affecting competition in the processed market. All this information was determined by asking industry interviewees for specific factors affecting their ability to compete, and is a compilation of their perceptions about these factors. Whether the perceptions given are in fact true can be determined only by further independent analysis.

5.C.i. Competition in commodities

The competitive position of Ontario in various fresh and processed products is given in Table 5.1. This position is based on judgements provided by various individuals. Others may have different opinions about competitiveness because they weigh differently the many factors that are taken into account in assessing the competitiveness of particular commodities. Many of these factors are related to whatever definition of market determines who the competitors are.

In setting the criteria used to define the dimensions of the market, we designated the market space as Ontario. Therefore, commodities with continuing and substantial imports were considered import sensitive, while commodities with continuing and substantial exports were considered export competitive. Market form was defined in terms of the product form, either fresh or various types of processed product. A corollary consideration when talking about form was quality, since in many instances product movements for high quality product are not the same as for low quality product. Here we dealt with quality seen as standard in Ontario. Market time for processed products was the full year, since they could be held and sold over that period. Market time for fresh produce was more difficult to define because, although each crop had a specific harvest period when it was "in season", the season for the crop could be extended or compressed depending on the profitability in producing the product. For our purposes, we defined the current growing season for the crop as the period of comparison. Some fresh produce could also be stored and carried into periods when it was no longer being harvested. For these crops, we considered the regular storage season as the appropriate period of comparison.

Competitiveness can be classified into export competitive, insensitive, and import insensitive. Various fresh and processed products are classified by these categories in Table 5.1. Looking at fresh produce, the first export competitive crop is apples for which there is two-way trade between Ontario and the United States and also considerable export to third countries. The latter point has led us to call this an export competitive commodity. Ontario is especially strong in exporting both fresh

Table 5.1. Competitive Position of Ontario's Principle Fresh and Processed Fruits and Vegetables and Their Products Vis-à-vis the United States in 1986.

Export Competitive	Insensitive	Import Sensitive
	Fresh	
apples	cabbage	asparagus
carrots	corn, sweet	cherries, sweet
cauliflower	mushrooms	grapes
celery	strawberries	lettuce
cucumbers, greenhouse		peaches
onions		potatoes
rutabagas		tomatoes, field
tomatoes, greenhouse		
	Processed	
beans, frozen	tomatoes, canned *	apple juice *
corn, canned *		asparagus, canned and frozen
corn, frozen		cherries, frozen
beets, canned		cucumber, pickled
peas, frozen		grape juice
mixed vegetables, frozen		jams and preserves *
tomato juice		mushrooms, canned *
		peaches and pears, canned
		strawberry products *
		tomato paste and puree **

* competitive pressure coming through trade with third countries.
** competitive pressure coming through trade with the US and third countries.

and stored carrots and onions, and rutabagas. It exports some cauliflower and celery, and greenhouse cucumbers and tomatoes. In future, there is hope that Ontario develop a premium export market for its peaches, but this is just in the developmental stages at present. Cabbage is called an insensitive crop because there is already two-way trade in it, and corn, mushrooms and strawberries are in this category because Ontario is almost self-sufficient when these crops are in season. The import sensitive crops are crops for which Ontario is importing product when Ontario produce is in season. Asparagus, for instance, has come from the US West Coast, table grapes from California, lettuce from the United State and Quebec, peaches from the US East Coast, potatoes primarily from the Maritimes, and some field tomatoes from the US Midwest.

A look at the processed product shows that both the producing and the processing industries influence competitiveness in processed product. Ontario is competitive in third country markets for beans, corn, and peas. It is experiencing stiff third country competition in the canned corn business, but this is still a significant export business for Ontario. Ontario's exports to the United States of mixed vegetables is increasing, while small amounts of tomato juice are moving into the United States from Ontario. Canned tomatoes are considered insensitive because the market appears to have come close to self-sufficiency in 1986, though it was under considerable third country competition in the early eighties. Many of the other processed products are subject to import competition. Competition in the areas of asparagus products, frozen cherries, pickled cucumbers, and grape juice is due to US pressure. Imports of apple juice, jams and preserves, canned mushrooms and strawberry products from third countries is placing competitive pressure on both Canadian and US producers. With tomato paste, California tends to set the North American price for the highest qualities of paste while the European Community has been moving paste onto the continent in the other quality ranges.

Summary of the situation shows that the current trade in horticultural products demonstrates the ability of certain items to compete with US production. In general, most products in Ontario are not competitive because costs are too high, as a result either of the fundamental characteristics of horticultural industries in Ontario or of government- sanctioned interventions.

5.C.II. Production

Factors affecting micro-competitiveness in producing product for the fresh and processed markets are examined in terms of the principal cost elements and the characteristics that affect them. Costs are an important determinant of competitiveness when product competes in the market.

5.C.II.a. Costs of production

The Economics and Policy Coordination Branch of the Ontario Ministry of Agriculture and Food (OMAF) annually determines and reports the cost of production for most fruits and vegetables. These costs are based on recommended production practices and actual costs as determined by a survey of representative producers. Comparison of these costs with those in other Canadian provinces as well as with the US states is difficult. Most efforts calculate costs on different bases, making comparison of them difficult. The major differences among cost-of-production studies are, 1) the way fixed costs for thing such as machinery depreciation and general farm overhead are allocated to enterprises, 2) the way owned resources such as the farmer's time, land and money used in production is valued, and 3) the way harvesting and marketing costs are treated.

Land

The difference in the cost of land among the different areas of production is said to be significant by those familiar with land markets, and to provide a significant difference in the cost of production. The relatively high cost of land in southern Ontario has apparently caused some production of vegetables to move into more northern counties in Ontario such as Exeter and into the Eastern townships in Québec. The cost of fruit growing land in the Niagara Escarpment is very expensive, raising the costs to farmers there, and also limiting their ability to expand. Producers claimed that land

for growing fruits and vegetables is much cheaper and also more available in most of the United States. This seems to be supported by statistics on land prices which show land in central and southern Ontario costing $4737 per hectare on the average, compared with an average $3903 (Canadian) for the relevant US states (Table D.5.4). Still, there are wide discrepancies in land values in both countries.

Chemicals

Since Canadian producers are on the average smaller than those in the United States, they probably do not get the same price discounts for either fertilizer or pesticides that their US counterparts do. But US producers tend to use more chemicals, because much of the US production of fruits and vegetables is irrigated, which causes more plant disease problems, and because the growing season is longer. These factors raise the total cost of pesticides used in US production considerably over that of Ontario.

Labor

It is essential that growers who hand-harvest their crops have a stable and reliable work force. In Ontario the industry has had to rely on either the seasonal supply of local workers or on imported workers. Workers are needed for not less than 14 weeks, but unemployment regulations require pickers work only eight weeks to qualify. The result is that local pickers do not work long enough and, when they do, they are not very productive. Growers prefer to bring in Carribean workers who are more productive pickers, although in recent years the federal government has been making this more difficult in order to create jobs for unemployed Canadian workers. The US industry, a representative of Ontario growers says, has benefitted from a whole culture of transient farm workers who move with the harvest, providing an indigenous, skilled labor force. The differential advantage this labor force has provided the US producers seems to be declining, however, as it is replaced by mechanized harvesting and workers who are less willing to migrate.

Cooling and Storage

Cooling facilities for Ontario field crops are said to be in short supply. The quick removal of the field heat of vegetable crops, especially for broccoli and lettuce, is essential, however, since it adds 5-6 days to the life of the vegetable, maintains quality, and reduces the amount of shrinkage in the produce. On the other hand, Québec is said to have some of the finest jacketed storage space in Canada.

Transportation

The fact that trucking charges in the United States were set in US dollars is said to help keep US product more expensive, thus keeping it out of Canada. An importer says that transportation costs, coupled with the exchange rate, doubles the nominal dollar value of Californian product sold in Ontario. On the other hand, Ontario fresh produce is able to move south into the Great Lake States in Canadian trucks and compete in the US markets. Thus, a large potential market of probably one quarter of the US population lies within an 8 hour truck ride of London, Ontario.

5.C.II.b. Characteristics of production

The characteristics of production have an important bearing on costs. The following discussion details specific characteristics of fruit and vegetable production in Ontario which affect the costs of production.

Yields

Processors say yields in Ontario are lower than in the major production areas of the United States. One major processor says corn yields in Wisconsin are 10 per cent greater than Ontario's , and bean and pea yields 75 per cent greater. Several others say that Ontario yields are around the same as those of Minnesota and Wisconsin. They also say Québec seems to have better yields in both corn and beans than Essex county in Ontario. Recovery rates on corn are also higher there. Washington state is said to get very high yields on apples, cherries, grapes, carrots, corn, onions, and potatoes. Possible causes given for the better yields elsewhere are less variation in temperature and better soils.

An examination of Ontario yield statistics in comparison with those of major producing states in the United States shows that, in general, Ontario's yields on green and wax beans, broccoli, and peas were the same as those in major producing states (See Table D.5.5). Yields in Ontario were higher for carrots, cauliflower, and cucumbers, and lower for strawberries, corn, potatoes, and tomatoes. The difference between these figures and those given by processors may be due to differences in the collection of statistics on different products or in presentation of statistics about quantity harvested versus marketed. It could also result from unique circumstances of particular firms. Sorting out the exact basis for the differences requires much further work.

Soil Types

One large processor whose parent company has plants in the US Midwest says that soil types and land quality are much more variable in Ontario than in the US Midwest. A similar difference between New York state and Minnesota and Wisconsin has been noted by academic researchers in those states. Most importantly, the variability of soil types means that crops in the area serving a processing plant ripen at different times and differ more in quality than in areas with continuous soil types. Consistent ripening across the production area serving a plant makes it easier for the Midwestern US plants to schedule harvesting. This characteristic is especially important to processors such as those processing peas, since they must move specialized harvesting equipment around their production area.

Quality of product

While processors seem to feel that they have greater variability in quality, those handling fresh product say the quality of most Ontario produce is as good as imports. They say such quality can be produced because of Ontario's good soils and climate, although produce making its way to the fresh market usually either loses quality due to poor post-harvest handling or suffers from having its quality undervalued as a result of poor merchandising.

The season

Ontario is a seasonal producer of fruits and vegetables and, in general, has a shorter and later season than most of its foreign competitors. By being later in the season, most of Ontario's fresh produce does not receive the premium price that the first produce of the season usually receives. That premium usually goes to produce imported from south of the border, since it is much earlier. The season also affects processors by giving them a shorter season over which to process, thereby making it necessary for them to have greater capacity to produce a sufficient quantity of output in a year. The Pacific Northwest, particularly Washington, has a longer season for certain crops because its mountains provide land at different altitudes with varying climates. For example, sweet corn is said to be available to Washington processors over as many as 60 days, while it is only available for 20 days in the US Midwest.

Location

Generalizing on the impact of the latitude at which Ontario lies is difficult. Some processors say Ontario is on the northern fringe of production for many of the vegetable and fruit crops. They go on, pointing out that US production is favored with more uniform temperatures and more sun, but Ontario seems to have more consistent yields than other areas. Québec, on the other hand, is said to have a better land base and climate for crops not requiring a lot of heat units.

5.C.II.c. Assessment of Production Competitiveness

In our judgement, Ontario's major disadvantages in competing with the United States in vegetable production are lower yields in some crops, a shorter season, and difficulty obtaining harvest labor. Growing conditions for some of the temperate vegetables are good, making the province competitive in them. In fruit production , Ontario appears to suffer from a limited and very expensive land base, low yields, severe winters, a short season, difficulty getting harvesting labor, and higher costs for purchased inputs. The net effect of these factors on particular commodities is set out in Table 5.1.

5.C.III. Processing

Factors affecting competitiveness in processed product can be examined in terms of cost elements and characteristics that affect the cost structure. Processors say the key problems limiting their competitiveness are those of raw agricultural product costs, labor costs, and accessibility to the market. They point out that Canada has a smaller market than the United States and that the cost burden of government-imposed regulation in Canada is greater than in the United States. Some of the differences in costs for the US are offset by the cost of transportation and tariffs on imported product entering Ontario.

5.C.III.a.Costs of Processing

The cost of raw farm product is a critical cost element for the fruit and vegetable processing industry. Processors say the cost of vegetables represented 50-55 per cent of the cost of producing frozen vegetables, labor 10-15 per cent, and packaging 10 per cent. In canning, the cost of corn, beans, and peas represented 16-20 per cent of the cost of canned product, while the cost of peaches represented 50 per cent of the cost of the canned peaches.

Food materials

Representatives of producers of fruits and vegetables for processing say that the price they receive for farm product is competitive with prices in the United States, while processors say that the price they pay is greater in Canada – a situation they attribute to the influence of marketing boards on the price-setting process. When asked about cost of production, however, processors recognize that production in Canada is more expensive for many of the same reasons that affect production of product for the fresh market, including unfavorable temperatures and a shorter growing season. Some processors also argue, however, that marketing boards have made processing vegetable crops the most profitable cropping alternatives for farmers. The desire for contracts by farmers is seen as direct proof of this.

Specific price comparisons between Ontario, Québec, and various US states are impossible to make with current data because prices vary by location and company in terms of product standards and conditions of sale. One generalization given by a large processor is that prices paid in Ontario are 10 per cent higher for processing vegetables and 30 per cent higher for tomatoes and tender fruits. Prices in Québec are lower than in Ontario, although still higher than in the United States, largely because Québec's marketing boards wait until after Ontario prices are set in order to set Québec prices at a level that will allow their processors to be price competitive in Ontario's processed product market.

Labor

Large processors say labor is considerably more expensive in Canada than in the United States, although the magnitude varies considerably by company. One major processor says his costs are twice those of a plant of the parent company in Ohio. Another major processor says his costs are 34 per cent higher, while still another says his labor costs are similar to plants in Wisconsin and Minnesota. Finally, one says his labor costs average out to $9 an hour versus $5 an hour in the US. Labor costs in Québec are said to be lower than in Ontario and work and safety standards lower there also although they have been improving over time. A possible explanation for the differences in these statements is that processors often compare costs on a product basis. When this is done, the effect of both wage rates and productivity of labor are incorporated in the comparison. This means that the macro comparison of wage and factor productivity done above is probably more useful than simple statements by processors about labor cost.

Reasons given by processors for higher labor costs in Canada are higher base wages, partly due to the greater use of unionized labor and the greater strength of these unions, and the much better fringe benefits such as workmen's compensation and unemployment insurance paid workers in Canada. Labor costs in Canada are also kept higher than they might otherwise be through the use of less seasonal labor -- only 20 per cent of the total -- and lower worker turnover in Canada, both factors affected by unionization. All the larger fruit and vegetable processors are unionized, although unionization in this industry, at about 30 percent of its employees, is lower than the 54 per cent average of the food and processing sector as a whole.

Unionized companies see unions as a way of life in Canada. They are not viewed as a problem by the companies; as one manager says, "They are just out trying to protect their members in the system." Managers in several other processors agree and add that it is the responsibility of the manager to control labor costs. All feel that doing business in Canada simply means staying in line with the general labor settlements. Management must step in when necessary to bring down labor costs merely as part of remaining competitive.

Packaging

Packaging is an important cost element for some products, recently exceeding the cost of the agricultural product in some processed products. A large processor reports that its cardboard costs are somewhat higher than its US parent 's, while its other packaging materials are cheaper. Another processor says glass is cheaper in Canada.

Manufacture of cans by processors began in the 60's, but economies of scale, high capital needs, and changing technology led even the largest processors in Canada to divest themselves of can-making facilities and to buy instead from can makers. This has placed manufacturing of cans in the hands of only a few firms. Small processors feel that moving to free trade would lower their cost of cans appreciably by increasing the competition among can makers and enabling them to pay lower prices, eliminating such situations as that facing a small canner who is paying 25 percent more for cans than a larger processor nearby.

Energy

An industry representative says Canadian processors have some advantage in the cost of electrical energy, but some disadvantage in oil and gas. The net effect is that those using energy-intensive processes such as evaporation are at a disadvantage. For the future, the larger processors see energy costs declining to a level comparable with those of the US processors. This will be facilitated through the new federal energy policy, which allows companies to rent pipelines to move gas. The paper work to do so is considerable, however, so the smaller companies are unlikely to avail themselves of this.

Equipment

Canadian processors see themselves as being as modern as their US counterparts, although they are a little behind in the use of microprocessors to control product flow so that all machines on the line are operating at their rated capacity. Most investment in new equipment simply copies existing technology. Much of the equipment bought by processors is imported, but they do not have to pay duties on it because it is so specialized that it is not made in Canada. Still, equipment is more expensive than in the United States because the distribution system in Canada handles smaller volumes and because US firms get larger price discounts by buying more units in a single purchase.

Pollution Control

Pollution control varies considerably with locality. Some processors say that US processors in the Midwest face much less stringent requirements, while others say they face similar requirements in at least Minnesota and Wisconsin. The need for pollution control also differs by commodity, with starchy products tending to require much more pollution control than non-starchy crops. Disposal of winery wastes in particular is a problem in Ontario. The degree of control required directly affects the amount of capital invested in controlling pollution as well as the operating costs, making it more expensive for those who have to meet more stringent standards.

Transportation

Freight rates in Canada are relatively higher for processed products than for fresh products, and all are marginally more expensive than in the United States. How much more expensive these rates actually are depends on the company's bargaining power. Larger companies seem to be able to get rates that are similar to those in the United States. At present truckers are giving larger processors very good rates in the hope that the processor will stay with them when trucking in Ontario is deregulated.

Transportation costs are also viewed as representing a larger proportion of total costs, since Canadian plants serve a market that is a thin band of population running across Canada. US plants, on the other hand, are surrounded by their markets. The validity of this argument is uncertain, however, in that much of the fruit and vegetable production in California, Oregon, and Washington moves to major markets more than 2,500 miles away.

Storage

The cost of storing inventory is high for a seasonal business processing for only a short part of the year and then holding inventory for the rest of it. Freezing companies find inventory holding costs especially high because they have to keep the product refrigerated at all times. Larger companies typically are able to obtain operating loans at lower interest rates than smaller companies, helping ease their cost of inventory.

Marketing

The significance of marketing costs varies considerably with the type of product. For some products the cost of marketing has eclipsed the cost of raw agricultural product used. Some Canadian processors feel that, while they may have been able to compete with US firms on a manufacturing cost basis, they will never be able to compete with them on a marketing basis. US firms have established brands and much larger markets to spread the marketing costs over.

5.C.III.b. Characteristics of Processing

The characteristics of processing have an important bearing on costs. The following factors seen as affecting significantly the costs of processing.

Plant/Company Size

Most Canadian processors see themselves at a disadvantage in competing with US processors because they see the US plants as much larger and having much longer runs, providing them with economies of scale and size. We found only one Ontario processor who thinks that the scale of plant is not a concern, reasoning that economies of scale are achieved at fairly small volumes.

Capacity

Canadian processors in both the canning and frozen specialty products say that US processors have considerable excess capacity in place which could conveniently serve the Canadian market.

Location

Ontario canners and value-adding processors see their proximity to the United States as a major drawback, since their markets in Ontario and Québec are within the distribution radius of underutilized US plants. On the other hand, some Ontario producers and commodity freezers see their close proximity to major US markets providing them with major opportunities.

Seasonality

Plants operating in Canada are disadvantaged by their reliance on domestic crops which have relatively short harvest seasons -- periods lasting only two to three months/year in Ontario and one-third shorter in Manitoba than southwestern Ontario. The shorter the harvest season means the greater the capital investment in a plant to achieve the equivalent annual output of a US plant. The result is a higher capital-to-output ratio in locations with shorter seasons. Plants are trying to counter this problem by extending the time they are operating , using the following steps: 1) increasing the number of products handled so that they have different harvest seasons; 2) further processing domestic product; and 3) reprocessing and repackaging of imported fruits and vegetables.

Corporate Relationships

US-owned companies dominate the packaged food business and their Canadian subsidiaries are said to piggy-back on the research and development and on the advertising effort of their parent firms. This is especially important for those firms with formulated and branded products, products sold using heavy marketing programs. The US parents have built these brands over a long time and have developed strong marketing organizations. Canadian companies do not have brands as strong and, lacking experience or market presence in the US, find it difficult to compete against the US brands.

5.C.III.c. Assessment of Processing Competitiveness

In our judgement, Ontario's major disadvantages in vegetable processing appears to be the high cost of raw agricultural product, the higher cost of labor in products, the short period of availability of raw agricultural produce, and the lack of economies of scale. Canning firms feel more severely disadvantaged by these factors, while freezers feel they remain reasonably competitive, all things considered. Fruit processors feel at a severe disadvantage compared to the US processors, especially given the high cost and limited volume of fruit available for processing. The net effect of these factors on competitiveness of particular commodities is detailed in Table 5.1.

5.D Summary

In this section, the competitiveness of Ontario's fruit and vegetable production and processing industries has been compared with that of the US competitors. The meaning of competition was first discussed , since competition can be measured in different ways. Competition was then examined, first from a macro and then from a micro perspective. While macro measures of competitiveness are useful in showing general features of competitiveness, they are useful only in looking at the processing industries. Micro analysis draws out specific factors important in explaining competitiveness at the market level for both production and processing. Differences between Ontario and US competitors which affect competitiveness were identified. In general, the processing industry seems to suffer from a number of disadvantages, while the growing industry seems, on balance, to be reasonably competitive.

Section 6 - Factors Driving Demand

This section deals with the major aspects affecting the demand for horticultural products. Four factors have been driving changes in demand: first is the set of preferences that influence consumption of these products; second, the way these preferences demonstrate themselves in demand; third, the industries' efforts to promote generically fresh and canned product in the hope of influencing consumer preferences. Fourth and final is the impact that retailing has had on both what product and whose product reaches the consumer. The nature of each of these factors now will be considered in detail, especially because these factors will have an important bearing on the commodities which should be grown, and on the conditions for processing them.

6.A. Consumer Preferences

Consumer preferences, though they have changed slowly, have had a major bearing on fruit and vegetable consumption. Industry representatives identify four aspects of consumer preferences that seem to be changing the consumption pattern of fruits and vegetables. They are 1) concern over health and nutrition; 2) the need for convenience or ease of use; 3) quality; and 4) variety.

Consumer interest in nutrition and health has resulted in consumers demanding less salt and sugar, and more fiber in their diet. As a result of a preconceived notion that canned foods are high in additives, consumers have substituted fresh and frozen fruits and vegetables for them. Canners have attempted to offset this change by providing products low in sugar and salt, but these have not stopped market shrinkage.

Convenience is also an important factor for today's consumer, who wants easily prepared foods and is willing to pay a premium for the convenience they provide. Other factors associated with convenience are packages in specific serving sizes, or reclosable larger packages, and products that can be heated in the microwave oven. Those who want the ultimate in convenience eat our or buy prepared food in the delicatessen sections of supermarkets. The products available through these alternative channels vary in quality and character from many of the traditional products offered by processors.

Concern for quality is the third characteristic demonstrated by today's consumer, an interest that appears to be higher for the Ontario than the US consumer. The Ontario consumer is willing to pay a premium for a product that is attractive in appearance and excite the sensory perceptions. As well, a willingness to frequent specialty produce stores to buy these items has led to considerable growth of such stores in urban and suburban markets.

Finally, consumers want variety in meals. They want value-added products such as sauces and ethnic foods which they may not know how or not have time to prepare from scratch. They are also buying more exotic fruits and vegetables. Increasing disposable incomes have provided the means to afford this increased set of choices, and probably accounts for the altered types and amounts of consumption that has been occurring and is likely to be maintained.

6.B. Overall demand

Over the past decade, the market for fruit and vegetables has been a mature market growing at around the same rate as the population, given the stability in per capita disappearance in retail equivalents. Within these broad categories, consumption of particular products has changed considerably. Disappearance of canned fruit and vegetables has fallen by 11 per cent. Disappearance of frozen products has risen by 4 per cent per year, and disappearance of fresh product has risen by 7 per cent. These trends have paralleled but not been as dramatic as changes in the United States, where disappearance of canned products has fallen by 20 per cent, frozen has risen by 10 per cent, and fresh has risen by 12 per cent. These percentage changes are misleading, however, if one does not recognize that the quantity of canned and frozen product represented only 15 per cent of per capita fruit disappearance, when juice is excluded, and only about 12 percent of per capita vegetable disappearance.

Demand for canned product is said to be much less elastic than for frozen product. The effect of this, at least in the United States, is said to be that canners find it difficult to sell more product even when they cut prices. With frozen product, processors seem to be able to move more strongly into the market by cutting prices. The reason may be that the frozen product is more readily substituted for fresh. Another aspect of these tradeoffs is that consumers appear to substitute more readily across commodities processed a certain way rather than across processes. Thus, a consumer will substitute another type of frozen vegetable when the primary choice is not available rather than substitute the canned form of the product.

The increase in consumption of fresh produce is in line with a growing concern over health and nutrition. Fresh produce is perceived by the consumer as a healthier product than canned. Although fresh produce is high priced out of season, wholesalers find that consumers do not seem to be aware of the premium they pay for this produce. Lack of concern may be because they do not realize how much more they pay, or because they do not mind paying it. At any rate, the increase in fresh consumption has grown across the board in Ontario, while in the United States it has been in favor of salad items and fruits such as apples.

The overall consumption of canned fruits and vegetables has declined, a trend seen to be continuing as a result of people appreciating foods in different ways today. This is reflected in the changing way fruits and vegetables are prepared for consumption. The consumer is less attracted to the product of the canning process, unless the product is only available in canned form -- such as tomato paste -- or the consumer prefers the taste of the canned products -- which is often true for peas, corn, green beans and beets. Demand for canned soups and tomato juice is increasing. The big losers are canned peaches, pears and vegetables.

An important distinction that needs to be made is the difference between fresh frozen produce and highly processed frozen product. Fresh frozen is so close to fresh in taste, color, and texture that consumers seem to equate the two. As well, frozen produce has the advantage of being more convenient than fresh and not suffering the same loss during consumer preparation. Frozen produce also offers considerable flexibility over fresh and canned in scheduling consumption. Even processors prefer frozen produce, since they find it more versatile than canned as an ingredient in further value-added food products such as the highly processed frozen product including such items as entrees and low calorie dishes.

Apart from the consumer viewpoint, another useful way for agriculturalists to look at the situation is in terms of the per capita disappearance of fruits and vegetables in fresh equivalents -- the amount of fresh produce used to formulate all the product that disappeared in the various end forms. This helps indicate how consumption affects food production needs. Per capita disappearance of major fruits and vegetables in Canada over two decades is found in Tables D.6.1. and D.6.2. respectively. Highlights of the disappearance of <u>fruit</u> include the following:

- per capita disappearance of <u>fruit in total</u> has declined slightly over the last few years;
- disappearance of the principal fruit crops grown in Ontario accounted for only 21 kilograms or 38 per cent of the total <u>fresh disappearance</u> of 56 kilograms, with 10 kilograms or 25 per cent of the total 38 kilograms of fresh produce used for <u>juice</u>,
- disappearance in <u>fresh</u> form of fruit crops that can be grown in Ontario was fairly stable over time; and
- disappearance in <u>juice</u> form of fruit crops that can be grown in Ontario increased considerably over time.

Highlights of the disappearance of <u>vegetables</u> included the following:

- per capita disappearance of <u>vegetables in total</u> (excluding mushrooms, potatoes, and tomatoes) increased considerably over the past two decades, rising from 46 kilograms in 60-64 to 66 kilograms in 1980-84;

- much of the increased disappearance was in fresh product which rose 16 kilograms between 1960-64 and 1980-84, while canned dropped 1 kilogram and frozen rose 4 kilograms;

- fresh carrots, corn and onions were major fresh vegetables accounting for 18 kilograms or 36 per cent of all fresh disappearance of 51 kilograms, while fresh broccoli, cauliflower, and cucumbers, though still relatively small, have shown considerable growth;

- canned corn accounted for 5.3 or 62 per cent of the total disappearance of 8.5 kilograms of canned vegetables;

- frozen carrots, corn and peas accounted for 4.7 kilograms or 78 per cent of the per capita disappearance of frozen vegetables, and

- per capita disappearance of potatoes and tomato products other than paste was fairly stable over time.

6.C. Promotion

Generic advertising of both canned and fresh produce has been carried out in recent years. The Canned Food Council and Ontario Food Processors Association ran a $600,000 pilot project in February, 1985, to see if they could stimulate demand for canned products. Besides using the services of Brian Buckingham, of Buckingham White Salituro Inc. of Toronto, the committee is said to have been staffed with talented marketers. Canners and their trade associations were very positive about the impact of the test program, but some people in the fresh and frozen product businesses questioned what the campaign really proved. It was not clear whether it just increased trial use for a short period or did indeed re-educate the consumer and change consumption habits for the long run -- an answer that will become clear only in observing markets over the longer run.

Some promotional work on the nutritional and health value of fresh produce has also been done by an organization of growers and sellers of fresh produce that is called Fresh Flavour Foundation. The impact of any of these promotional programs on future demand is, however, unclear. To the extent that they both advertise fruits and vegetables, they may increase total market demand by making consumers more aware of these products. If either the canned or fresh message is more effective, the one with the more effective message may increase its relative demand at the expense of the other. But the promotional campaigns are also sending contradictory messages to the consumer about what is "good". Canners argue that fresh product is not really fresh since much of it has lost its nutritional value by the time it reaches the consumer. Processed product, on the other hand, has had its nutritional value locked in at the time of processing. Fresh produce boosters claim the opposite, and these conflicts may confuse the consumer, leading to decreased consumption of all fruits and vegetables.

6.D. Marketing channels

The retail industry has an important bearing on the distribution of horticultural products. It has become much more consumer oriented, viewing itself as a purchasing agent which must satisfy the customer rather than as an agent of the producer and processor. As individual retailers have adjusted to competitive pressures, they have had little time to worry about processor and wholesaler problems in the fruit and vegetable industries. They have become interested only in buying as cheaply as possible whatever they think the consumer wants to buy.

The success of fresh produce in the marketplace is in part determined by the desire for those further along the marketing channel to handle the product. In food retailing, fresh produce requires greater control and faster turnover in the store. Lack of capability to handle fresh product creates a natural impediment to the expansion of these sales. In the Hotel, Restaurant, and Institutional (HRI) trade, high quality fresh produce in good condition is highly desired, but provincial produce is found to be lacking. One broker estimated that at present the trade is importing 75 per cent of its fresh requirements. He said this could probably be produced locally if growers took care of and presented their produce properly.

6.E. Summary

This section has dealt with the major aspects affecting the demand for horticultural products. Four factors have been driving changes in demand. First is the set of preferences that influence consumption of these products. Second is the way these preference demonstrate themselves in demand. Third is the industry's efforts to promote generically fresh and canned product in the hope of influencing consumer preferences. Fourth and final is the impact retailing has had on what product and whose product reaches the consumer. The net impact of these factors on demand for fruits and vegetables will rest more on whether or not and in what manner fruits and vegetables will be processed than on the volume handled. Consumers will continue to consume fruits and vegetables, but they appear to want more fresh or convenience-type products and fewer canned goods.

Section 7 - Factors Driving Supply

This section deals with the major factors influencing the supply side of the fruit and vegetable industries. Six factors are seen as driving changes in supply. The first is the development of facilities to handle fresh product, helping improve the quality of perishable product sold in the fresh market and extending the season for storable commodities. The second is the continually enlarging geographic scope of competition, increasing the number of competitors. The third is the rationalization of processing plants, helping to lower processing costs. The fourth is the increasing significance of multinational enterprises in the Canadian industry, increasing the aggressiveness of competition and emphasizing the importance of economic performance. The fifth is the increasing significance of marketing, creating an advantage for the larger companies. The sixth and final factor is the search by existing competitors to find new products that will help them become more profitable and/or competitive. In this section the six major factors are examined in detail, particularly in light of their important bearing on the amount and type of future farm production and food processing. They will also influence the potential competitiveness of the two industries vis-à-vis the United States.

7.A. Fresh Produce Handling Facilities

A major complaint of industry representatives and wholesalers is that the current fresh produce harvested in Ontario loses its good to superior quality because the field heat is seldom counteracted. This problem is especially serious in broccoli, cauliflower and lettuce production. The result is shorter product life, faster decline in the quality of the product, and a lower yield from fresh weight. This latter factor is especially important to the HRI trade and has led it to rely heavily on imported produce. Field cooling of produce would remedy these problems, resulting in a stronger market for perishable products.

Building of cold storage facilities has helped extend the marketing season for storable products such as apples, carrots, onions and potatoes. They can be kept to be consumed in fresh form later in the year.

7.B. Changing Suppliers

The geographic extent of markets for fruits and vegetables has been continually expanding over time. At one time, each major city had market gardening businesses located around it. Many of these businesses declined as better marketing infrastructure developed and as transportation costs dropped. Now fresh produce moves great distances, introducing new and distant competitors into formerly local markets. This expansion has created greater local competition so that profits no longer accrue automatically to those close to the market. Instead, they are earned by those providing the customer with better value than the competitors.

7.B.I. Supply Situation in Canada

The supply situation for fruits and vegetables is changing across Canada. In Ontario, the potential for increased production of vegetables is considerable, especially with former tobacco farmers searching for alternative crops. Tobacco farmers find the intensive production practices of tobacco match more closely those of vegetable cropping than the extensive production of corn and soybeans. The high value per acre for these crops is also attractive, although the risk of such production often is not recognized. Several knowledgeable sources expect increased land to be directed into this activity, possibly with government assistance, and see a growth in vegetable acreage of up to a third of present areas. Most of the production will probably be of fresh market produce, since processing capacity and the ability of processors to sell their product limits the amount processors will take.

Heavy subsidization by the provincial government has facilitated Québec's considerably expanded production over the past few years of certain vegetables requiring fewer heat units. The

investment has been largely in sorting, grading, cooling and processing of product grown there, but has also been supported by a pricing strategy which has Québec raw product prices set low enough so that Québec processed product can compete in Ontario markets.

The Maritimes are seen as becoming relatively less important in the Canadian fruit and vegetable processing business. Their major products currently are frozen potato products and some canned and frozen vegetables. Production of most products exceeds local demand, so that products have to be moved to other markets. The price competitiveness of these products in other markets is limited by the added cost of expensive transportation in conjunction with an increasing cost of production resulting from limited land and an uncooperative climate.

7.B.II. The United States

The United States used to export a considerable amount of product to the European Community. In recent years, much of this trade has been cut off through the Community 's apparently adopting a view of the United States as a "least-favored-nation". This undesirable status seems to stem both from continuing conflict over agricultural policy between the Community and the United States, and from the enlargement of the Community to include Greece, Spain, and Portugal -- all important producers of fruits and vegetables. The major export market for US fruits and vegetables and their products, apart from Canada, has become the Pacific Rim.

The production of fruits and vegetables may well increase in the future as state governments in the United States search for ways to improve farm incomes. Government in several northern states see production of these crops as one of the brightest alternatives for their farmers and appear likely to provide incentives to encourage the expansion of production. Such production could compete directly with Ontario production.

The freezing industry is also shifting east as processors in Minnesota and Wisconsin gradually change from canning to freezing. As this occurs, they will pose a greater competitive threat to Ontario freezers. The necessary investment is likely to occur in the near future, since US processors have maintained good profits, the interest rates are now lower than in the past, and farm product prices are down.

7.B.III. The Rest of the World

New exporters of fruits and vegetables and their products are the several countries, both developed and less developed, which have not up until this time done much exporting of these crops. The reasons for their doing so are varied. The European Community has become a significant force in certain products, including canned peaches, canned tomatoes, and tomato paste. Expansion of production and processing of these products is heavily encouraged through the agricultural policy of the Community. The production and processing of peaches and pears has been similarly encouraged in Oceania. Eastern European countries are heavy exporters of various fruits, jams, apple juice and pickles to Canada. Less developed countries such as Chile, Guatemala and Mexico are becoming increasingly important as exporters. Whether or not they will be successful is questionable. While they do not lose production because of winters, they have wet and dry seasons which limit their growing seasons and affect quality. All are driven by the need to earn foreign reserves to pay for imports of other goods and the upkeep of payments on their international loans. Overall, many countries that are seeking to increase their exports of their fruit and vegetable crops.

An idea associated with the development of these new sources of competition is the concept of worldwide sourcing of product by the multinational processors. According to this theory, large multinationals would supply each of their markets at lowest cost. The implication here is that many new low-cost sources of supply could be developed, displacing traditional suppliers. This concept is invoked by managers in the large processors, but few examples of such a practice are evident. Companies themselves more likely find that cost and quality concerns will dictate nearby production and processing.

7.C. Rationalization of Processing Plants

The rationalization of processing plants is an ongoing process as processors invest in automation. While it helps lower processing costs per unit, it also makes them more capital intensive. The ability to cover capital costs is becoming the factor that is making or breaking many processors. To cover these costs, processors are increasing the volume they put through the plant and are also trying to extend the use of the plant and equipment over more of the year. Extending the time the plant is used means investing in additional equipment related to specific products, again increasing the capital invested in the business.

Small single-product plants with short processing seasons are seen as disappearing from the industry. They have been able to stay in business for the present because their capital expenses have been paid off in the past, and their operating costs have been low. But they are not profitable enough to justify the expense of upgrading. As their equipment reaches the end of its useful life, these plants will be closed down.

7.D. Role of Multinational Processors

Multinational enterprises and their subsidiaries dominate the Canadian industry. They entered Canada for several reasons. The first and key reason was to benefit from the high tariffs on imported products. In the past ten years, tariffs have decreased considerably, but multinational companies have continued to operate in Canada because their plants were already in place. They have operations that have been particularized to the Canadian situation, not only meeting evolving Canadian regulations and requirements but also satisfying the product preferences of Canadian consumers. In addition, they are able to take advantage of the natural protection provided by transportation costs, although the amount of natural protection provided by transportation costs has declined. A third reason for US corporations to invest in plants in Canada is to bypass the US antitrust laws, which limit their ability to buy their competitors in the US. This policy does not bind their acquisition of companies in other countries and, because Canada is contiguous to the United States, it is a favored place for making acquisitions. Recently, US enforcement of antitrust policy has been much weaker, lessening the antitrust incentive for acquiring companies in the United States.

The presence of multinationals in the Canadian market has affected the aggressiveness of competition in the Canadian market and will continue to do so in the future. Some experts believe that multinationals have brought innovation into the market place faster because their coverage of multiple markets means that they are able to identify successful products in one market and carry them to other markets. Their innovativeness has been stimulated by their ability to spread the costs of research and development over several markets, thus lowering the unit costs of these activities. Multinationals also stress the importance of economic performance of their activities since they have alternative places for investing their money. This means that they insist on each business meeting their performance standards or suffering the consequences.

7.E. The Role of Marketing

The cost of marketing and promotion is eclipsing the cost of raw product in many processed products. The increasing significance of marketing is creating an advantage for the larger companies because they were able to develop strong retail brands to differentiate themselves in the market place. They also have the market presence to negotiate better deals with retailers than the smaller processors. These two aspects will now be discussed in detail.

7.E.I. Branding

Consumers buy many grocery products on the basis of brands, making a brand franchise a key to doing well in the retail market. US nationals and Canadian subsidiaries of US nationals have strong brands which are sold in both Canada and the United States. They are strong because the companies have been building their brand franchises for a long time, and have high volumes, enabling them to spend heavily to maintain their brand franchises at a relatively low cost per unit.

A 'strong' brand allows processors to get product placed on the retail shelf, since retailers always tend to stock the leading brand. Those who do not have a strong brand find it impossible to place their branded product on the shelf. Instead, they have had to pursue the private label trade, packaging product with the retailers brand. Private label business is done strictly on a price and quality basis and is much more price competitive than the brand business, where differentiation through the brand protects products from price competition.

The feeling of Canadian processors is that they might be able to compete with US owned firms on a manufacturing cost basis, but never on a marketing basis. Canadian subsidiaries have been able to benefit by picking up products and marketing programs developed and largely paid for in the US market and applying them to the Canadian market. Canadian companies trying to enter the US market with new brands are thought to face a high barrier to entry because overcoming the strong US brands in those markets would require heavy promotional expenditures. If US firms closed down their Canadian subsidiaries, on the other hand, they would still have their brand franchises in Canada. Even though they would not be processing here, they would be able thus to maintain their competitive advantage.

7.E.II. Dealing

Retailers in Canada insist on deals from processors in order to place produce -- through price discounts, through cooperative promotion with the manufacturer, or through having processors pay for special locations in the store. The more profitable, large companies have been they have been leaders in setting the level at which this activity is pursued. While this has helped the large processors take over shelf space from the small processors, even they complain about the amount of money spent on an activity which they still do not feel they can stop.

7.F. New Products

Existing competitors are continually looking for new products that would help them be more profitable and/or competitive. In particular, processors are looking for ways to appeal to those consumers seeking "less processed" products. Several alternatives are being explored to do this. They include branded fresh products, modifications in products, and use of new technologies to provide a product with more of the characteristics of fresh products.

7.F.I. Branded Fresh Products

Processors hope that within ten years, branded fresh produce will account for 10 per cent or more of total produce sales. Campbell Soup Co. has already branded mushrooms and is working on developing tomatoes and lettuce for branding. Del Monte is expanding its brand name in the tropical fruit business, and Kraft, Pillsbury, and Castle and Cooke (Dole) are all test marketing packaged, pre-cut vegetables. The hope of these companies is that they will be able to produce vegetable products with better taste developed through biotechnology and/or with greater levels of convenience from being partially prepared.

The success of branding produce is unclear at present. Retailers and others are skeptical about the ability of the processors to develop a brand image and price premium for products grown in most parts of the country and sold as a commodity. The companies will also have to overcome some major production problems. Growing, harvesting, cleaning, cutting, packaging, and distributing product on a national basis might prove logistically impossible or extremely expensive. These products are also likely to require much more careful management by retailers to control presentation and turnover, thereby suggesting that retailers are likely to avoid them unless returns are significantly greater.

7.F.II. Modification of Products

Some products are being processed in ways that make them look less processed. Fruit salads, for example, are being cut so that the chunks of fruit are larger and less regular. These items are then sold through the supermarket's delicatessen.

7.F.III. New Technology

Three technological developments are seen as important in the future of the horticultural industries: irradiation, new canning processes, and plastic cans. Irradiation is seen by some as causing major changes in the market for fresh vegetables in the future. It would enable produce to be brought over much greater distances and kept for longer on the shelf by reducing biological activity in it. The likelihood of the technology affecting the market in the near future is small, however, since it has been around for a long time but has not been adopted widely -- a result of both regulatory and consumer resistance. At present it is being used to sterilize spices and, in the United States, to treat imported mangoes and some meat products. One problem with the technology is that the proper exposure time has to be found for each product. Too little time will not sterilize the product, too much will spoil it. Another problem is that the technology is very expensive, so that it is unlikely to be built specifically for sterilizing lower value seasonal crops. These problems with irradiation have a better outlook for being solved only if the consumer becomes more concerned with chemicals used to fumigate and preserve fresh produce.

Certain proprietary canning processes have been developed to produce a canned product that has better color and texture. The Veri-Green and Salad-Bar-Fresh processes both used acidifiers to reduce the cooking time required. While these processes have improved products such as peas, beans, and asparagus, their impact on the consumer preference for these products is still being determined. Even if successful, these processes would still be unlikely to turn around the declining demand for canned product since the canning process imparts such marked effects.

New packaging technology is also being introduced, in part to take advantage of changing consumer preferences. Plastic cans are being used as a way of improving canned products. A major problem with them, however, is that the label is affixed when the cans are manufactured, preventing the processor from pursuing the standard practice of assigning brand identification by labeling the cans when they are drawn out of inventories for shipment to the retailer. As well, processors have to buy or lease new canning equipment to use these cans.

7.G. Summary

This section has dealt with the major factors influencing the supply of fruits and vegetables. Six factors are seen as driving changes in supply. The first is the development of facilities to handle fresh product. The second is the continually increasing geographic scope of competition. The third is the rationalization of processing plants. The fourth is the increasing significance of multinational enterprises in the Canadian industry. The fifth is the increasing significance of marketing. The sixth and final factor is the search by existing competitors to find new products that will help them become more profitable and/or competitive.

The net effect of these various factors on the supply of fresh fruit and vegetables is that competition in these products will increase as new suppliers develop and suppliers from further afield seek to enter Ontario's market. Processors of canned and frozen fruits and vegetables and their related products will have to work hard to find growth. Processors of these products who appear to be in the strongest position to do well are those who can provide the consumer with an attractive product at low cost. Large companies tend to have the competitive advantage in this as they often have strong brand franchises in the market place.

Section 8 - No Agreement

A primary objective of this study was to determine the future of Ontario's fruit and vegetable producing and processing industries, given the changing competitive situation. This section provides our forecast of what will happen in these industries over the next five to ten years, with the absence of a new trade agreement with the United States but with the continuation of the current exchange rate with the United States. This evaluation is based on the competitiveness information from Section 5 and the driving factors discussed in Sections 6 and 7. We will now look at specific aspects of the projected situation -- which, in total, should reflect gradual change.

8.A. Consumption

Consumer demand will grow slowly and with the natural growth of the population. The shift to fresh produce will continue as the price difference between imported fresh crop and preserved -- either canned or frozen -- domestic product narrows because of the larger relative increases in the cost of processing. Much of the out-of-season fresh market will be served by imported produce.

8.B. Products

The general outlook for fruits and vegetables, fresh and processed, will not be much different from the current position expressed in Table 5.1 of Section 5. Conditions will continue to support the current situation. Those commodities with export potential will continue to move to export markets and those commodities subject to import competition will face import competition. Some modest changes will occur as a result of ongoing trends. Processors of basic products will lose share to imports of fresh produce. Exports of frozen products will increase somewhat, while the export markets for canned product will erode due to high production costs in Ontario. Now let us look at the future for the production and processing of these products.

8.C. Production

Discussion of production has to be separated into fruit production, vegetable production for the fresh market, and vegetable production for the processing market. Looking first at fruit production, apple production will continue to expand because the orchards that will be responsible for the increases are already planted. Tender fruit production will change little since expansion of the industry is limited by the availability of land and cost reduction is limited by the high cost of this land and the climate.

Production of vegetables for the fresh market will increase, but profitability will decline as more farmers, including former tobacco growers, enter the industry. The increase in supply will drive down the price of fresh produce in season. This situation will, in turn, increase the use of cooling and storage facilities as a way of insuring a better quality product that will attract a higher price. Greater use of cooling and storage will also extend the market period for fresh products. The economic reward for investing in these practices will be justified by the higher returns to those making the investments.

Production of vegetables for processing will be healthy as marketing boards and associations keep processing vegetable prices increasing in line with cost increases. Processors may gradually move to displace farmers as suppliers of these vegetables through further vertical integration so that they can earn the high profits found in growing them. This appears more likely in the more mechanized crops such as beans, corn and peas. The remaining farmers will become bigger and there will be fewer as the current large-scale, low-cost farmers buy land at depressed prices and adopt more capital-intensive technologies. Already some of these large growers are moving into processing in order to assure themselves of a market for their highly profitable processing vegetable crops.

8.D. Processing

The processing industry overall will experience growth slower than that of the overall market, though specific segments may experience faster growth. In particular, the value adding businesses in which many of the jobs currently being created in Ontario's processing industries are located promise to do well.

A significant trend that will occur in the commodity end of the processing industry is the rationalization of this business through consolidation of companies and closing of plants. This movement to rationalization is said by industry representatives to have been delayed in recent years by the declining value of the Canadian dollar. Plants have been kept open which, if the dollar had been stronger, would have been closed down. If, however, the dollar stabilizes or starts to strengthen, the move to rationalize will take on new vigor.

Three factors are driving the move to rationalize. First, firms and plants want to improve their return on investment, which can be done by spreading fixed costs by the handling of greater volumes. This tactic means, in turn, running the plant for a greater part of the year. Further investment in equipment is required to handle additional products, creating further need to increase activity. Second, plants will invest in automation to increase efficiency, again creating the desire to increase volume handled. Third, firms will have to carry greater inventories if retailers are unwilling to do so . This situation favors those companies, almost always the larger ones, with the financial resources to carry out such steps. Many of the smaller canning companies are at a major disadvantage at present since they are nearing the end of their useful life and are not sufficiently profitable to justify reinvestment for modernization and expansion.

Rationalization will lead to fewer and larger processing plants. In future, the industry will consist of a few large firms serving the masses with standard or commodity products, plus some small or diversified firms serving market niches that desire specialized products. The niches will be created because the commodity firms cannot successfully serve all the market with standard product. Rationalization will also affect rural economies, as many plants are located in small- to medium-sized population centers with limited opportunities for alternative industrial employment. Many of the smaller plants in outlying regions will be closed, decreasing the number of jobs in these regions.

While rationalization is occurring domestically, the Canadian industry will be looking for growth in markets outside Canada. Some of Canada's larger food processors, such as Labatt's, are already entering the US market because it presents more attractive opportunities than Canada; unable to find sufficient room for growth in Canada, they are looking to the larger arena. Most of this growth will probably be pursued through acquisition of US companies rather than shipping product from Canada.

The likelihood of new investment entering Ontario varies by the source of the investment. Canadian processors outside Ontario are interested in acquiring companies in Ontario so that they have market position once the rationalization is completed. US companies, on the other hand, are said by people in the industry to be taking a wait-and-see approach to investment in Canada. Canadian industries look fairly competitive from a US perspective at the present exchange rate, but if the rate changes after the companies have made an investment in Canada, they may find themselves locked into a high cost industry which can compete only in a limited Canadian market.

8.E. Conclusions

If no trade agreement is reached, Ontario's horticultural industries will undergo gradual change. They will continue to be high-cost relative to the US industries, but they will be comparatively healthy because they will be protected from much of the US competition. Exports will continue in the areas where Canadians are cost competitive in foreign markets.

The assumption that the Canada/US exchange rate will be constant is heroic. Forecasting what it will actually be is difficult. As the Canadian dollar has declined, Canadian producers and processors have found it easier to export and also easier to compete in the domestic market, since their costs are lower relative to those of US producers and processors. The danger in the current situation is that this

increased business activity, with its higher profits, has allowed companies to relax cost control measures. The result could be an increased cost structure which will offset at least some of the effect of the devaluation and, should the exchange rate return to the earlier levels, leave Canadian industries with higher relative costs, making them noncompetitive at those levels. Strengthening of the Canadian dollar against the US dollar could also affect consumption. This would make imports cheaper and, to the extent that consumers seem to prefer fresh produce which is imported from the United States, facilitate the shift to fresh vegetables and fruit at the expense of substitute products processed in Ontario.

Section 9 - An Agreement

This section provides our forecast of what will happen in these industries over the next five to ten years should there be a new trade agreement with the United States. This evaluation is a synthesis of the competitiveness information in Section 5 with the discussion of driving factors identified in Sections 6 and 7. In order to prepare this synthesis we assumed the nature of this agreement to be one of removing all barriers to trade. This represents the extreme and an actual agreement will probably achieve less, meaning that the actual impact of an agreement will be somewhere between that posed here and that described in the previous chapter. Under any new agreement, Ontario's horticultural industries will look dramatically different. Individual businesses will have to cut costs considerably or they will be eliminated, and every aspect of the situation will show considerable change.

9.A. Interest in an Agreement

Nearly every business pursues growth, using expansion of market size as the easiest and lowest cost way of achieving it. Free trade will provide a large market that is both close by and easy to serve under common standards. Canadian growers of vegetables such as carrots, onions, and greenhouse cucumbers and tomatoes say they are interested in free trade for this reason. So do processors who freeze or can certain vegetable products such as beans, broccoli, carrots, cauliflower, peas, and mixed vegetables. A trade agreement will remove impediments to trade that they now face. Canadian fruit growers and processors of fruit and other vegetables and processors of value-added, or formulated products say they are against more open trade since they will not be able to compete on a cost basis with their US counterparts.

The general feeling of many in the Canadian industries is that US growers and processors of most fruits and vegetables want to have greater trade with Canada because they feel they can serve the Canadian market competitively. Those in the US who have reservations about a trade agreement with Canada appear to be growers and processors just south of the border who grow some of the same crops under conditions similar to those in Ontario. They are concerned about their ability to compete, given the increasing flow of product from Ontario and Québec that has been entering their market.

9.B. Concern over negotiations

Many people in Ontario's horticultural industries express concern over negotiations. First, they feel that the industries are extremely complex. They are affected by much legislation and each commodity, product type, and sometimes company has its own position on free trade. In their view, negotiations must be conducted carefully so that these different interests are fully represented in the negotiations. Second, the industry representatives are concerned about the goals of the Canadian government negotiators. Many feel that the industries have little to gain from the negotiations and much to lose in any agreement. They are pleased with the present set of policies and feel that it is important that these policies be safeguarded. They argue that it is likely that the industry will give up much more than it gains because government negotiators will bargain away the horticultural industry, a relatively small industry, to facilitate concessions for Canada's more important agricultural commodities; as a result, they are only reluctant participants in free trade talks.

9.C. Possible Policy Changes

Reaching an agreement will involved dealing with a number of specific policy issues. Of all the things the government influences, the exchange rate is the single most important factor for Canadian industry at the present time. Its impact is seen as overwhelming that of government policies, although this does not mean that policies are unimportant. If the Canadian dollar strengthens, policies will become much more important for both producers and processors. As well, Canadian fruit and vegetable processors see that their situation is firmly linked with that of agricultural producers, arguing that if the government chooses to protect agriculture, it must also protect the processors of

agricultural products. Full harmonization of policies will have far-reaching consequences. It will create a common competitive environment in Canada and the United States, limiting Canada's ability to pursue policies aimed at solving uniquely Canadian problems and affecting Canadian markets.

9.C.I. Tariffs

Tariff reductions are seen as very likely to be part of any agreement , with their being traded off one for one; that is, for each reduction made by one side, the other side makes a reduction. It has been said that US interests want to get rid of Canadian tariffs but keep US ones, arguing that the United States needs them because their dollar is so much higher. Similar arguments have been used in the past to support the need for Canadian tariffs. The US National Food Processors Association says that tariffs should be witheld from the trade talks and maintained at their present levels unless Canada eliminates the prohibitions on US canned foods that is maintained by Canadian container size regulations.

Representatives of Canadian producers of fresh produce say they want to keep tariffs. One argument made is that they help shield the Canadian market from US surpluses. At times, US surpluses are greater than the entire Canadian production of a given crop, and eliminating tariffs will allow these surpluses into the Canadian market, causing distressed prices. This problem will be exacerbated if the Canadian dollar strengthened.

There are two further items of concern, one on each side. The U.S. is always complaining about Canada's surtax policy although the fast track has only been applied only once. Removing this policy will not have much impact, given the minimal use that has been made of it. If other policies limiting the entry of low-priced imports are removed, though, this policy will become much more important. Conversely, Canadians are concerned about US trade policy due to its capricious makeup and uncertain application. Countervail, for example, is seen by many as being used by the United States to tell Canada what policies it can and cannot pursue, threatening Canadian sovereignty and Canada's ability to develop independent policy. The US system is also seen as much too responsive to political pressure. For example, six bills now before Congress deal with trade on which countervailing duties are desired.

9.C.II. Grade Standards

Canadian fresh produce growers want to maintain minimum grades provided for under the Canada Agricultural Products Standards Act. Without them, they feel Canada will be swamped with a lot of low quality product at low prices, hurting consumer desire for specific product and driving down prices. The US, on the other hand, dislikes the large number of minimum import grades for Canada and wants many fewer at a minimum. In the US there has even been resistance to further minimum grades among states. The makes it seem likely that standards will be reduced.

9.C.III. Phytosanitary Standards

Grower representatives say Canadian producers want to harmonize phytosanitary standards. They say the US government is the problem in moving to common standards, since it uses its standards to restrict imports. But the question of the level at which the standards will be harmonized remains. If Canada lowers its standards for seed potato industry, this industry's sales to the rest of the world will suffer as US producers will have a potato just as good as Canada's, resulting in the latter's superior standing in export markets being undermined.

9.C.Iv. Bulk Shipments

Producer representatives say that producers in high priced markets want to maintain the bulk shipping restriction allowed under the Canada Agricultural Products Standards (CAPS) Act since this prevents the local market from being eroded by bulk shipments from low price markets. Producers in

low-cost markets are interested in eliminating this policy within Canada, but not with the United States, which will result in even lower cost product from there entering the Canadian market. This policy has been on the negotiating table for three years. The United States is said to want this policy ended because of the discretionary power Agriculture Canada has in determining whether shipments can be made.

9.C.v. Packaging/Container Standards

The US has argued that packaging standards for fresh product are a nontariff barrier. At present the US is trying to reduce the number of container sizes for fresh product. Changing this policy will require harmonization between the US and Canada , but this is not seen as posing serious problems.

Changing container regulations for processed product is more complex. Canadian industry representatives and government officials say that containers size regulations for canned and frozen fruits and vegetables are old and were not introduced to limit trade, although their effect on stabilizing imports of US canned product is now recognized by Canadian industry. Canadian canners, however, do not want this policy ended, since they think US canners will dump ends of lines and packs, or surplus product into the Canadian market while maintaining more stable market practices in their US markets. Instability and lower prices will drive Canadian canners out of business.

The US processors see these standards as an absolute barrier to the importation of large portions of the United States canned fruits and vegetables and want the elimination both of regulations governing dimensions of the allowed cans and of the form of declaration of net quantity of food in each of the can sizes. US canners argue that this policy is used specifically to limit imports of canned goods because Canada's standards allow only a limited number of can sizes provided for in the ISO standard for general purpose food cans. They also argue the regulation is unfair because the US does not impose a similar restriction on Canadian product moving to the US. The situation is slowly changing as Canada expands the number of sizes allowed.

9.C.vi. Import Control

The use of Sections 56 and 57 of the Fruit, Vegetable, and Honey Act to limit imports of produce without a Canadian buyer has been identified as a restriction of trade by a joint committee of the House of Commons and Senate. They have asked Agriculture Canada to eliminate this regulation; at present, it is not being enforced. Representatives of Canadian producers, however, feel that Canada will become a dumping ground for surplus US produce without this policy. They claim that growers in the US will put surplus product into Canada's market while strengthening their own market. They expect these surpluses to be high as California growers grow a lot of produce and tend to operate speculatively. West Coast growers, they say, will send "rollers" -- trucks loaded with product and sent to find a market -- from the western United States to the Toronto and Montreal markets. Still, some big, traditional wholesalers in Canada are said to prefer an end to the current regulations so they can be agents for large shipments from the United States.

US producers are said to have mixed opinions about the policy. Some California growers want this policy kept because they then know what price they will get under current legislation. Others want it eliminated.

9.C.vii. Pesticide

Industry representatives in Canada say harmonization of pesticide standards will be good for both Canada and the United States as it will help reduce the bad press currently reaching the public about pesticide residues. They argue that current restrictions are set up primarily to provide nontariff barrier rather than to protect public health. These representatives say standards will have to be designed to exclude certain pesticides that could cut Canadian products out of foreign markets.

9.C.vii. Exchange Rates

A general concern is that an agreement may lead to equalization of the value of the Canadian dollar vis-à-vis the US dollar. A stronger Canadian dollar is viewed by many Canadian industry producers and processors as harmful to them, especially those who have allowed their costs to rise. Processors say they will be in trouble with a Canadian dollar worth over 80 cents US. The exact impact of the exchange rate depends on the cost structure of each business.

9.C.viii. Price Stabilization

Agriculture Canada and some representatives of Canadian producers want the current price stabilization schemes replaced by tripartite stabilization programs because this will result in a producer's being either in the program or out of it. The current program is seen to be designed largely for political purposes – in particular, for supporting small producers who have created market instability by not being committed to the commodity business and merely coming and going at will. Allowing such a situation has only postponed the inevitable adjustment the industry must make. The United States argues that this is a subsidization scheme.

9.C.ix. Regional Development

The US has challenged a wide range of programs supporting Canadian regional economic development, considering them unfair trade practices. Under an agreement, regional development will be much more difficult for this reason.

9.C.x. Transportation Regulation

The US has continually raised concerns about Canada's trucking regulations (Office of the US Trade Representative, "National Trade Estimates: 1986 Report on Foreign Trade Barriers"). While some US trucking firms have been granted licenses to operate in Canada, the United States wants a more permanent solution , one that does not depend on discretionary decision-making.

Ontario and the Federal governments have moved to deregulate the transportation industry. The federal government has introduced legislation in the House of Commons to increase competition and lower prices in rail, air and trucking modes. But provinces must also take action to deal with trucking, which is within their jurisdiction. The Ontario government has introduced legislation that will dismantle most of the regulations governing truckers by the middle of 1987. The full period of adjustment will be five years. Most other provinces are planning to use Ontario's legislation as a model to produce a uniform trucking regime in Canada. The new legislation should help create more competition in the Canadian market between Canadian and US truckers and reduce shipping costs for Canadian goods.

9.C.xi. Marketing Boards

Representatives of Canadian producers claim that marketing boards as essential to the social and economic well-being of producers. They also argue that the United States has institutions performing similar functions to marketing boards, citing bargaining associations; marketing orders, licensing, support; and the cooperatives that control the amount and quality of product being moved.

Canadian marketing boards have been criticized by processors who argue that marketing boards will have to go under free trade with the United States. They say that prices are not set competitively but are indexed to grower costs or to what the grower says is needed. They see it as a practice that has been allowed because the Canadian market has been protected. Others criticize boards for tending to divide the country into a number of sovereign, food-self-sufficient states in order to maintain provincial industries at the expense of efficiency losses.

A study by the USDA ("A Review of Federal Marketing Orders for Fruits, Vegetables, and Specialty Crops", AER No. 477, Nov. 81) states that producer cooperatives and some producer representatives in the United States support marketing orders as a means of bringing economic stability and equity to fruit and vegetable marketing. Handlers and other growers are concerned about the mandatory nature of the marketing orders and the restraints they impose on marketing options. The report suggests that efficiency losses resulting from quantity limitation by marketing orders are offset to varying degrees by stabilization gains. Terminating federal orders will temporarily reduce incomes for many growers; and, in the long run, prices could be either higher or lower than under marketing orders, depending on whether efficiency losses outweigh stabilization gains or not.

9.C.xii. Provincial Liquor Boards

The US continues to examine whether Canada is meeting its obligations under the 1979 Tokyo Round of the General Agreement on Trade and Tariffs and the provincial adherence to those obligations. The United States wants to eliminate all discriminatory liquor practices. US wine exporters estimate they will sell an additional $US 6.7 million each year into Canada with the discontinuation of discriminatory mark-up, distribution, and listing practices (Office of the US Trade Representative, "National Trade Estimates: 1986 Report on Foreign Trade Barriers").

9.D. Consumption

Consumer demand will probably grow at the same rate with or without an agreement. The shift to fresh will continue, though this may proceed at a faster pace with an agreement because lower-priced imported fresh produce will be available in Ontario. This effect will be offset to some extent by the availability of low-cost processed product also coming from the United States.

9.E. Products

Predicting the volume of various commodities that will be produced under a free trade arrangement is difficult because Ontario is only a short-season producer of fruits and vegetables. Producing and selling sufficient volume will require taking away the seasonal market from other producers and extending the market season for Ontario produce either through storing fresh produce which can be stored or processing that which cannot be. The ability to take away market from other seasonal processors is largely a question of cost. In at least some areas such as fresh vegetables and apples, Ontario producers seem to be able to produce at competitive costs. With some storage vegetables, Ontario also seem cost competitive. For processing vegetables, however, the question is not just one of production costs but also one of processing costs; for a number of vegetables, processors feel that they cannot compete in the processed product market, given the high costs of processing.

People in the industries feel the outlook for fresh fruits and vegetables will be in line with the current position indicated in Table 5.1 of Section 5. The difference will be that both export competitiveness and import sensitivity will increase. Fresh growers think they can maintain their position in apples, expand considerably in cole crops and peppers, double their export of carrots and onions to the US market, and expand exports of greenhouse vegetables. Processing vegetable growers think that they will grow greater acreages under free trade. Growers of the tender fruits think they will disappear.

In our judgement, the removal of the current policies protecting the Canadian market will result in Canadian production patterns that will probably look much like those in the midwestern and northeastern United States. Northern cities all used to have local truck farms around them. These are largely gone now , except for production of a few fruits and vegetables for the seasonal market. Winter vegetables come in from California, Texas and Florida. The primary reason for this pattern is that savings in cost of production exceeds the cost of transporting product to the markets in the northern US. The replacement of processed product with fresh vegetable from south of the border will mean that overall vegetable production will be smaller, while most of the fruit production will be eliminated in Ontario.

Prices for fruits and vegetables in the Canadian market will probably be lower and more unstable because many of the Canadian and Ontario government policies in place have tended to stabilize producer and processor prices at levels above those in the United States. Since price instability increases risk, fewer farmers will want to produce, while lower prices will encourage processors to handle more product. A tangle of factors affects the determination of the net effect of these two forces.

9.F. Processing

The outlook for an unprotected processing industry will be different for each type of processing. In canning, the US industry has a capacity 20-30 times that of Canada, and considerable surplus capacity that US companies want to use. Canadian canners feel that Canada will become a residual market for the US processors who will occasionally swamp the Canadian market with their surpluses while maintaining stability quantities and prices in their US markets. This will make it impossible for Canadian processors to survive over the longer run.

The future ofdifferent types of processors will be different under an agreement. As a price business, the Ontario's vegetable freezers have the potential to be cost competitive with the demise of marketing board pricing of vegetables. They will be able to expand by shipping product to the United States. Processors producing high value-added products will be rationalized out of existence, however. As industry representatives point out, even with a low Canadian dollar, the Canadian industry has not done a good job penetrating the US market.

What will happen to the industry will also be influenced by each company's situation. Some, especially managers in the larger companies that are subsidiaries of US parents, feel the Canadian plants will be eliminated. They are not cost competitive with their parents in the US and their parents have surplus capacity in the United States that they want to use. Those companies with plants that could serve Canada will relocate production in their US plants. Rationalization will not be immediate, but will occur once the first recession came along. Every company that retrenched will still have its brand franchise in Canada, but will be able to operate at lower cost.

Other companies will continue to produce in Canada those products that were competitive in cost of production. Freight will become a more important cost consideration to the industry, and particular companies will rationalize their production among their existing plants. Canadian companies will have trouble entering the brand businesses in the United States because US companies have well established brands there.

9.G. Labor market adjustments

In 1982 the Ontario fruit and vegetable processing industry employed 8,600 workers; the heaviest concentration was located in Essex county, with 24 per cent of the provincial employment, followed by Toronto with 18 per cent. A decline in production will require that workers find new jobs. This will be facilitated by the relatively young age of the labor force, since 62 per cent of this labor force was below 44 years of age in 1981, and by the availability of jobs in Southern Ontario. It will be hindered by the low level of education of this force: 71 per cent have only a high school certificate/diploma or less.

9.H. Strategies to facilitate adjustment

Ideas about possible ways the government can help industry adjustment to the terms of an agreement are few and far between. Most of those interviewed felt that policy should not be changed, making discussion of adjustment assistance largely irrelevant. The specific suggestions that arose were to

1) eliminate Canadian tariffs over 15 years and US tariffs over 5 years;

2) refuse to negotiate an agreement on a broad basis that will create winners and losers, asking instead to negotiate items one by one so that only improvements in the current situation are achieved;

3) let processors control their costs if necessary, even to removing any policies that might inflate processors' costs;

4) recognize that processors deserve to be protected if farmers are protected;

5) recognize that fruit production in Niagara is a social problem, since the government has legislated people onto the land and helped create some of the highest cost produce in the world.

We feel that the government needs to consider developing three types of policies if it is to help these industries adjust. The first is gradual adjustment of policies so that the pressures on the industries to adjust can be managed by them. The second is financial compensation for those who cannot adjust. The difficulty facing the government in this area is that people will lose jobs and plants will be written off anyway because of the ongoing rationalization of the domestic industry. Free trade, however, will probably put failing businesses out of business sooner so they may merit compensation. Finally, those who can be competitive under a trade agreement can be assisted through grants to achieve this position. This may involve grants for the construction of a new or revised infrastructure.

9.I. Conclusions

A major difficulty in preparing this synthesis is knowing the nature of any agreement. For this chapter, an agreement removing all barriers to trade is assumed. Such an assumption represents the extreme , for an actual agreement will probably achieve less. Consequently, the actual impact of an agreement will be somewhere between that posed above and that described in the previous section.

Under the assumed agreement, Ontario's horticultural industries will look dramatically different. Individual businesses will have to cut costs considerably or they will be eliminated. Growers of most field vegetables and apples are likely to be able to produce them at a cost comparative to that of US producers, although they prefer to not have to. Market prices will, however, be lower and more unstable than they are used to because many of the Canadian and Ontario government policies in place have tended to stabilize producer and processor prices at levels above those in the United States. In general, the producing industry is likely to be able to hold its own in most vegetable production, but the fruit growing industry, apart from apples, will be unable to compete in most markets. The canning industry will be considerably smaller than it presently is, and the freezing industry will experience some growth.

Section 10 - Further Research Needs

The horticultural industries have been neglected by researchers and analysts. Some reasons for this neglect are the complexity of the industries, the difficulties in determining the norms for the seasonal crops, and the lack of good economic data. The consequence of this neglect, however, is that there is a lack of general understanding of these industries and their competitiveness. The current state of knowledge is based on individual experiences and not always factually nor analytically substantiated. In conducting this study, it became apparent that experts had differing impressions of many factors important in competitiveness; for instance, yields being achieved by their competitors in the United States, and of labor costs there, that simply were not borne out by government data.

The lack of general and analytic understanding of the horticultural industries leads us to conclude that a rigorous quantitative analysis of it is required in order to understand fully the behaviour and competitiveness of Ontario's industry. Such a study would have the following components:

1. Determination of the competition facing Ontario produce and products.

The three major aspects for this include;

a. determination of markets (where and when) Ontario fresh produce and processed products compete in;

b. determination of who the competitors are that Ontario produce and products face; and

c. determination of the amount of product entering each market.

2. Collection and interpretation of price and costs for the various competitors putting product in the selected markets.

A full understanding of prices and costs is critical to understanding the competitiveness of particular sources. While much data is already published, what is actually being measured and reported is not always appreciated. Comparison of US data among states helps reveal the relative competitive position of the various states because the data, which is collected by the USDA, is consistent among them. There is no reason to believe that Canadian methods are consistent with those of the USDA, however, so that implications drawn through uninformed comparisons of data between the two countries may be erroneous. Ideally, a consistent data base derived from survey of the prices and costs of all competitors in selected markets should be collected. Failing this, the exact nature of available information in the various markets needs to be understood so that the differences can be accounted for in any analysis.

Necessary data on production would include length and timing of the season for principal crops, prices paid for processing and fresh uses, cost of production, yield, and quality; for processing, it would include size of plants, number of plants, product/commodity diversification of the plants, age of plants, portion of year operating, and costs of operation.

3. Analysing the structure of costs.

This involves determining why costs differ among the competitors and what the overall structure of costs are in supplying specific markets.

4. Analysis of policies affecting the competitiveness of the industry.

Specific policies which need attention at the present time include the following issues:

- Many of Canada's policies influence trade. The way that they work leads one to suspect that they have both stabilized and raised market prices for those products imported into Canada. Given the US interest in eliminating trade barriers, analysis is needed to determine how much Ontario prices would fall and how variable Ontario prices would be in the absence of these policies. Particular policies of significance in this regard are tariffs, bulk shipping restrictions, and can size requirements.

- Other policies such as marketing boards and price stabilization have also helped stabilize and may have raised the Ontario prices. Analysis is needed to determine how much the price would fall and how variable it would be if these policies were discontinued.

- Both the federal and provincial governments have been concerned with the development of industry infrastructure for marketing fresh produce and for processing. Such programs as the BILD grants in Ontario and the Fruit and Vegetable Storage Construction Assistance at the federal level have been used to encourage the development of an industry infrastructure. Since these activities have altered costs realized by businesses engaged in particular activities, they have had an impact on competitiveness, both encouraging the expansion of the horticultural industry overall and directing that expansion into particular commodities and products. The strategic implications of these programs, and possible new programs, need to be assessed.

- Some Canadian and provincial policies are blamed for impeding the ability of Ontario's industries to compete in other provincial markets. The impact on competitiveness from pollution control on the processing industries and from laws affecting labor costs needs to be assessed.

- The provincial and federal governments spend considerable amounts on research aimed at helping both processors and farmers. Many of these programs are directed at lowering costs, possibly by increasing efficiency, and hence have a direct bearing on competitiveness. A full understanding of the structure of costs for putting product into the market could be used to set research priorities by directing attention to significant cost areas and to areas where further research would yield the greatest gains in competitiveness.

5. Determining the changing structure of costs.

As the competitiveness of Ontario's horticultural industries changes over time, the industries will change. The impact of these changes in competitiveness need to be determined so that we determine what the industrial structure is likely to look like in future.

The outline of research activities given above suggests an integrated project which would involve a major commitment of funds and time. Many of the activities could also been done in a piecemeal fashion. The need to better understand the current statistics is paramount for any quantitative work that is done. Other projects could be more specific to individual needs. Performing the above analysis on a commodity-by-commodity basis for instance would be useful in assessing Ontario's competitiveness in any commodity and in determining how any one has been affected by government policies.

Analysing particular policies on competitiveness would provide an understanding of the impact of that policy. Also, the impact of policies directed at building an industry infrastructure could be assessed to see how effective they have been. Finally, analysis of the evolution of the industries due to forces other than external competition--forces such as changing economies of production and changing power of retailers--would give a partial understanding of pressures facing the industries. It would also help to predict more closely how they are likely to react.

Appendix A.

Terms of Study

Appendix A: Terms of Study

The following were the terms of study in the tender for contract:

- Review and update statistical (1980-85) and economic profile of the complete fruit and vegetable primary and processing industries in Canada, with specific focus on Ontario, Quebec and British Columbia. The profile will include production, marketing, international trade, value added, employment and costs.

- Review and update statistical (1980-85) and economic profile of same industry in the United States with specific focus on the Great Lake states, California, and Florida. Same information as required in the domestic profile.

- A comparison of the competitiveness of the fruit and vegetable industries between the two countries.

- Examine current demand pressures, opportunities and constraints affecting Ontario's horticultural industry, including new tastes/preferences, new technologies.

- Examine current supply pressures, opportunities and constraints affecting Canada and Ontario's horticultural industry, including impact of off-shore competition, technology (e.g. changing packaging concepts), and legal constraints.

- Examine impacts of proposed bilateral trade negotiations between Canada and the United States. Identify tariff and non-tariff barriers, likelihood of removal and government policies affecting the industry.

- Propose and comment on possible adjustment strategies for the Ontario horticultural industry and the provincial government in light of above impacts. Focus on crop change from structures, processing firm behaviour (investment pattern, technology), labour market adjustment and regional impact.

- To place this in the context of ongoing changes within the industry.

- Outline gaps in statistical, economic information that should be covered.

It was suggested that the appropriate study would include on-site interviews with leading horticultural representatives to assess their views on the industry, its competitiveness and opportunities/constraints arising from bilateral trade negotiations.

Appendix B.

Questionnaire

Appendix B: Questionnaire

QUESTIONNAIRE

Organization _____ Date _____

Individuals _____ Interview: Phone ____

_____ Meeting ____

_____

Phone Number _____

Markets Served By Ontario Products

Commodity: General/Specific _____

- Which markets does product from Ontario move to? How much product moves to each market (in fresh equivalent weight in tonnes if possible, otherwise in percent)

	Total Tonnes	Fresh Tonnes	Processed Tonnes
Ontario			
Eastern Canada			
Western Canada			
United States			
Total			

- How much competition does Ontario product face in these markets? Where does the large volume competition come from?

	Fresh	Processed
Ontario		
Eastern Canada		
Western Canada		
United States		

- How would you characterize Ontario's ability to compete in these markets using the following categories: Strong, Average, Weak, or In Trouble?

	Fresh	Processed
Ontario		
Eastern Canada		
Western Canada		
United States		

Competitiveness of Ontario Products

- We are interested in knowing what you think major factors are that affect the competitiveness of fresh product grown in Ontario?

  Commodity: General/Specific _____
  Market: General/Ontario/East C/West C/U.S.

	Importance of of the Difference	Magnitude of the Difference	Likelihood/Ease of Change if Negative	Likelihood/Ease of Maintenance if Positive
- costs:				
- variable costs				
- equipment costs				
- land costs				
- harvest costs				
- transportation costs				
- storage costs				
- characteristics:				
- yields				
- soil types				
- availability of land				
- availability of labor				
- availability of varieties				
- quality of product				
- duration of season				
- timing of season				
- availability of storage				
- other:				
- _____				
- _____				
- _____				
- _____				

- We are interested in knowing what you think major factors are that affect the competitiveness of product processed in Ontario?

  Process: General/Canning/Freezing
  Market: General/Ontario/East C/West C/U.S.

	Importance of of the Difference	Magnitude of the Difference	Likelihood/Ease of Change if Negative	Likelihood/Ease of Maintenance if Positive
- costs:				
- of ag. product				
- of labor:				
- base pay				
- benefits				
- unemployment				
- work. comp.				
- fringes				
- of equipment				
- of labour				
- of packaging				
- of pollution control				
- of transportation				
- of marketing				
- characteristics				
- size of plant				
- age of plant				
- level of technology				
- size of market				
- facility utilization				
- duration of ag. product supply				
- other:				
- _____				
- _____				
- _____				

• Looking at factors affecting your cost of the agricultural crop you process, what causes the distortion in the cost?

	Importance of of the Difference	Magnitude of the Difference	Likelihood/Ease of Change if Negative	Likelihood/Ease of Maintenance if Positive
- costs:				
- variable costs				
- equipment costs				
- land costs				
- harvest costs				
- transportation costs				
- storage costs				
- characteristics:				
- yields				
- soil types				
- availability of land				
- availability of labor				
- availability of varieties				
- quality of product				
- duration of season				
- timing of season				
- availability of storage				
- additional:				
- _____				
- _____				
- _____				
- _____				

Government Policies

- What are the major governmental policies affecting your business/the industry and could you describe how they alter your competitiveness so that they by limiting export from Ontario, by limiting import by Ontario, or by limiting import of Ontario product in other markets? Distinguish whether the impact is on fresh or processed product.

Canadian Policy

	Importance	Effect
Canada Agriculture Products Standards Act - easements on bulk shipments - packaging - grades - standards - labelling		
Fruits, Vegetable and Honey Act -Regulations 56 & 57, consignment selling		
Tariffs - seasonal duties - fast track surtax - remission of duties - other		
Import Licensing		
Federal price stabilization - Agricultural Stabilization Act (ASA) - Agricultural Products Board (APB)		
Federal Income Assurance - Advanced Payment for Crops Act		
Taxation		
Transportation		
Exchange Rate		
Storage - Fruit and Vegetable Storage Construction Financial Assistance Program		
Grants: - Regional Development Incentives		
Additional: - _____ - _____		

Ontario Policy

	Importance	Effect
Marketing boards - processing vegetables - processing fruits - tender fruits - fresh vegetables		
Regulations		
Subsidization		
Environmental Protection		
Additional: - _____ - _____		

Other Canadian Provinces' Policy

	Importance	Effect
Marketing boards		
Regulations		
Subsidization:		
Additional: - _____ - _____ - _____		

United States Policy

	Importance	Effect
Transportation		
Grants		
Marketing orders		
Regulations:		
- packaging		
- grades		
- standards:		
- phytosanitary		
- pesticide residue		
- labelling		
Subsidies		
Tariffs		
- countervailing duties		
Taxation		
Transportation		
Additional:		
- _____		
- _____		
- _____		
- _____		

Demand factors driving evolution

• What is the rate of growth in demand for the fruits and vegetables?

	All	Fresh	Processed		
			All	Canned	Frozen
Fruits					
Vegetables					
All					

• What are the are the rates different?

Factors to consider are those which support current trends or will alter current trends. Possibilities include:

Factor	Ranking	Impact on Demand
Relative prices		
Higher Incomes		
Tastes and Preferences - preference for fresh/frozen		
Retailer/Wholesaler Policies - additional:		
- _____		
- _____		
- _____		

Supply factors driving evolution

• What are the five majors factors you see driving the evolution of your business/the industry?

Factor	Ranking	Impact on Supply
- agricultural production		
- new technology		
- irradiation		
- new canning technology		
- new competitors		
- storage		
- ownership of plants and companies		
- willingness to make investments		
- strategy on marketing and R&D		
- market and product mandating		
- specialization of facilities		
- sourcing of product		
- changing costs of production and processing		
- profitability		
- capacity requirements		
- additional:		
- _____		
- _____		
- _____		

Where the industry will be under current factors

- What will your company/the industry look like in the future (5-10 years)?

  Dimensions to be addressed include:
  - domestic demand for products

  - volume of various farm products used

  - source of farm product

  - size and location of plants

  - companies in business
    - ownership of these companies

    - specialization and rationalization

  - investments
    - upgrading versus expansion

Where the industry will be under a trade agreement

- What is your view of a trade agreement with the United States? Why do you feel this way?

- When you look at the current policies in Canada and the United States, what policies:
  - must we hold on to and why?

  - can we allow to be changed?

  - do you want changed?

- What will your company/the industry look like in the future (5-10 years) under a trade agreement?

  Dimensions to be addressed include:
  - volume of various farm products used

  - source of farm product

  - size and location of plants

  - companies in business
    - ownership of these companies

    - specialization and rationalization

  - investments
    - upgrading versus expansion

Assistance in Adjustment

- What could the government/farmers/processors do to help facilitate adjustment?

Appendix C.

Those Interviewed In Depth

Appendix C: Those Interviewed In Depth

Organization	Person
Academic	
Pennsylvania State University	James Dunn
University of Wisconsin	Bruce Marion
Washington State University	Smith Greig
Government	
Agriculture Canada	Peter Bouris Peter Brackenridge Ken Dean Rhoda Gowan Lois Hunt Ken Hunter Jean Marleau Paul Sereda
Energy Canada	Ram Sahi Blaire Kennedy
Statistics Canada	Linda Magahay Brian Prentice
Ontario Manpower Commission	Frank Whittingham Jim Hsu
Ontario Ministry of Agriculture	Randy Baker Gary Gander John King Veino Poysa Joe Uyenaka
U.S.D.A.; Fruit, Vegetable, and Sweetners Branch	Shanon Hamm Nick Powers Glenn Zepp Ben Huang
U.S. Department of Commerce	Bob Lohoar
Commodity/Grower/Trade Representative	
Canadian Food Processors Association	Doug Lisle Debra Bryanton
Canadian Frozen Foods Association	Chris Kyte
Canadian Fruit Wholesalers Association	Hank Blommers
Canadian Grocery Products Manufacturers Association	Don Jarvis
Canadian Horticultural Council	Danny Dempster

Organization	Person
Commodity/Grower/Trade Representative (continued)	
Ontario Apple Commission	Jack Long Bill Wheatstone
Ontario Food Processors Association	Ted Chudleigh
Ontario Fruit and Vegetable Growers Association	John van der Zalm
Ontario Greenhouse Vegetable Producers Board	Don Moore
Ontario Potato Growers Marketing Board	Les Armstrong
Ontario Tender Fruit Marketing Board	Jim Rainforth
Ontario Vegetable Growers Marketing Board	John Mumford
National Association of State Departments of Agriculture	Bob Amato
Companies	
Canadian Canners	Frank Dennis Cecil Finnamore Tom Longworth
E.D. Smith	Jake Wamsteeker Debbie Doherty
Glassfoods Div./Int. Multifoods	A. Lutz
Green Giant/Pillsbury	A. Chappell Jill Carman
Heinz Canada	John Ingratta
King Canning	Jerry King
Labatts	Lorne Stevenson
Lever Mushrooms	Frank Hardy
M.L. Catania	Pat Gunning
Meadowglen Mushrooms	Ernie Skrow
Omstead Foods	Bob Richard
Ontario Produce	John Brown
Stafford Foods Ltd	David Hockin
Strathroy Foods	Dave Richards

Appendix D.

Tables of Economic Statistics on the Fruit and Vegetable Industries

Table D.2.1. Nominal Dollar Value (in Millions) and Provincial Share of Fruit and Vegetable Production

	1980		1981		1982		1983		1984		1985	
Fruit	$	%	$	%	$	%	$	%	$	%	$	%
Ontario	97.8	40.3	90.0	40.2	104.0	39.3	104.3	38.9	108.4	40.0	112.5	42.6
British Columbia	92.7	38.2	88.8	39.7	96.3	36.4	97.8	36.5	96.2	35.5	81.0	30.7
Quebec	33.3	13.7	22.4	10.0	32.0	12.1	34.6	12.9	35.8	13.2	44.1	16.7
Canada	242.8	100.0	223.8	100.0	264.5	100.0	268.0	100.0	270.4	100.0	264.0	100.0
Vegetable												
Ontario	243.0	44.1	259.8	37.7	303.7	43.9	296.2	40.6	348.4	42.3	347.4	42.1
British Columbia	54.8	9.9	67.6	9.8	67.3	9.7	80.7	11.6	88.8	10.8	97.8	11.9
Quebec	102.5	18.6	129.3	18.8	112.0	16.2	116.6	15.9	139.1	16.9	133.7	16.2
Canada	550.8	100.0	688.3	100.0	690.4	100.0	730.4	100.0	823.2	100.0	825.1	100.0

Source: Agricultural Statistics for Ontario, Publication 20, Ontario Ministry of Agriculture and Food, 1980-1985.

Table D.2.2. Number of Farms and Acres in Fruit and Vegetable Production for Ontario and Canada, 1981

	Ontario		Canada	
	Farms	Acres	Farms	Acres
Fruits	6,695	79,354	16,819	192,701
Vegetables	7,913	191,354	20,347	562,374
All Farms	82,448	14,923,250	318,361	162,815,073

Source: Statistics Canada,1981 Census: Horticultural Crops, Catalog 96 - 913, Field Crops, Catalog 96 -912, Land Use, Catalog 96 - 916.

Table D.2.3. Relative Contribution of Fruits and Vegetables to Total Agricultural Production

	1980 % of		1981 % of		1982 % of		1983 % of		1984 % of		1985 % of	
	Province	Canada	Province	Canada	Province	Canada	Province	Canada	Province	Canada	Province	Canada
Fruit												
Ontario	2.33	.64	1.89	.50	2.15	.57	2.13	.57	2.11	.56	2.2	.57
British Columbia	12.6	.61	10.9	.49	11.3	.53	11.4	.54	10.4	.49	8.1	.41
Quebec	1.62	.22	.93	.13	1.2	.18	1.37	.19	1.32	.18	1.4	.22
Vegetables												
Ontario	5.77	1.6	5.47	1.45	6.27	1.67	6.05	1.63	6.78	1.79	6.7	1.75
British Columbia	7.45	.36	8.30	.38	7.92	.37	9.43	.44	9.59	.46	9.9	.49
Quebec	5.00	.67	3.79	.72	4.20	.62	4.63	.64	5.12	.71	4.3	.67

Source: Agricultural Statistics for Ontario, 1980-1985.

Table D.2.4. Fruit and Vegetable Production for Ontario and Canada, 1985

	Ontario	Canada	Ontario as a Percent of Canada
	in millions of dollars		percent
Fruits			
Apples	44	116	38
Cherries	7	15	49
Grapes	27	36	75
Peaches	18	22	81
Strawberries	16	53	30
Total of Above	113	242	47
Vegetables			
Cauliflowers	13	24	53
Corn, sweet	23	42	54
Cucumbers	25	37	67
Mushrooms	69	133	52
Peas	10	29	36
Potatoes (1)	40	240	17
Tomatoes	93	110	85
Total of Above	274	614	45

Source: Statistics Canada, Catalog 22 - 003.

(1) Value estimates for Manitoba and Saskatchewan were based on production data.

Table D.2.5. The Percent of Ontario's Fruit and Vegetable Production Going to Processing, 1985

	Percent Processed (1)
Fruits	
Apples	37
Cherries	72
Grapes	90
Peaches	12
Strawberries	-
Vegetables	
Cauliflowers	21
Corn, sweet	63
Cucumbers	39
Mushrooms (2)	30
Peas	99
Potatoes	50
Tomatoes	63

Source: Calculated from Statistics Canada, Fruit and Vegetable Production, Catalog 22 - 003.

(1) Percent based on value of production.
(2) Estimated by mushroom growers interviewed.

Table D.2.6. Canadian Fruit and Vegetable Processors (1980-1984)

Year	Establish-ments	Production Employees	Shipments of Goods of Own Manufacture (a) Current (mil.$)	Shipments of Goods of Own Manufacture (a) Constant 1984 (mil.$)	Manufacturing Value Added (a) Current (mil.$)	Manufacturing Value Added (a) Constant 1984 (mil.$)
Fruit and vegetable canners and preservers						
1980	199	9716	1206	1592	459	606
1981	178	9045	1327	1586	511	611
1982	179	8510	1457	1578	588	637
1983	179	8356	1563	1607	664	683
1984	188	8874	1682	1682	724	724
Change 1980-84	-12	-842	563	205	265	118
% Change		-9	50	14	58	20
Annual % (simple)		-1.8	12.6	2.3	11.5	4.0
Frozen fruit and vegetable processors						
1980	33	3429	348	459	157	207
1981	36	3833	428	511	186	222
1982	36	4365	520	564	243	263
1983	38	4148	540	555	247	254
1984	36	4082	577	577	271	271
Change 1980-1984	+3	653	329	118	114	64
% Change		19	95	26	73	31
Annual % (simple)		3.8	23.61	5.1	14.5	6.2

(a) Implicit price index, G.N.E. (1984=100)

Sources: Statistics Canada, Fruit and Vegetable Processing Industries, Catalog No. 32-218; National Income and Expenditure Accounts, Catalog 13-201.

Table D.2.7. Ontario Fruit and Vegetable Processors (1980-1984)

Year	Establish-ments	Production Employees	Shipments of Goods of Own Manufacture (a) Current (mil.$)	Shipments of Goods of Own Manufacture (a) Constant 1984 (mil.$)	Manufacturing Value added (a) Current (mil.$)	Manufacturing Value added (a) Constant 1984 (mil.$)
Fruit and vegetable canners and preservers						
1980	97	5905	772	1019	311	411
1981	89	5479	849	1015	335	400
1982	83	4979	914	990	387	419
1983	81	4879	1004	1032	441	453
1984	85	5204	1078	1078	475	475
Change 1980-1984		701	306	59	164	64
% Change		-12	40	58	53	16
Annual % (simple)		-2.4	8.0	1.2	10.5	3.2
Frozen fruit and vegetable processors						
1980	11	660	70	92	19	25
1981	14	890	121	145	51	61
1982	--	1450	159	172	66	--
1983	15	1373	165	170	58	--
1984	14	1161	158	158	80	80
Change 1980-1984		501	88	66	61	55
% Change		76	129	72	321	220
Annual % (simple)		15.2	26.0	14.3	64.0	44.0

(a) Implicit price index, G.N.E. (1984=100)

Sources: Statistics Canada, Fruit and Vegetable Processing Industries, Catalog No. 32-218; National Income and Expenditure Accounts, Catalog 13-201.

Table D.2.8. British Columbia Fruit and Vegetable Processors (1980-1984)

Year	Establish-ments	Production Employees	Shipments of Goods of Own Manufacture Current (mil.$)	Shipments of Goods of Own Manufacture (a) Constant 1984 (mil.$)	Manufacturing Value Added Current (mil.$)	Manufacturing Value Added (a) Constant 1984 (mil.$)
Fruit and vegetable canners and preservers						
1980	24	1089	132	174	35	46
1981	16	1044	128	153	35	42
1982	18	959	145	157	46	50
1983	20	897	151	155	53	54
1984	24	940	161	161	55	55
Change 1980-1984		-149	29	-13	20	9
% Change			22	-7	57	20
Annual % (simple)			4.4	-1.5	11.4	4.0
Frozen fruit and vegetable processors						
1980	9	539	42	55	16	21
1981	9	488	55	66	18	22
1982	--	555	73	79	27	29
1983	9	477	61	63	24	25
1984	8	407	65	65	26	28
Change 1980-1984		-132	23	10	10	7
% Change		-25	55	18	63	33
Annual % (simple)		-5.0	1.1	3.6	12.5	6.7

(a) Implicit price index, G.N.E. (1984=100)

Sources: Statistics Canada, Fruit and Vegetable Processing Industries, Catalog No. 32-218; National Income and Expenditure Accounts, Catalog 13-201.

Table D.2.9. Quebec Fruit and Vegetable Processors (1980-1984) (a)

Year	Establish-ments	Production Employees	Shipments of Goods of Own Manufacture (b) Current (mil.$)	Shipments of Goods of Own Manufacture (b) Constant 1984 (mil.$)	Manufacturing Value Added (b) Current (mil.$)	Manufacturing Value Added (b) Constant 1984 (mil.$)
Fruit and vegetable canners and preservers						
1980	57	--	--	--	--	--
1981	51	--	--	--	--	--
1982	54	--	--	--	--	--
1983	56	1853	294	302	131	--
1984	57	1965	334	334	157	157
Change 1980-1984		--	--	--	--	--
% Change		--	--	--	--	--
Annual % (simple)		--	--	--	--	--
Frozen fruit and vegetable processors						
1980	2	--	--	--	--	--
1981	2	--	--	--	--	--
1982	--	--	--	--	--	--
1983	5	57	6	--	2	--
1984	5	95	10	10	3	3
Change 1980-1984		--	--	--	--	--
% Change		--	--	--	--	--
Annual % (simple)		--	--	--	--	--

(a) Data for Quebec was not reported in 1980-1983
(b) Implicit price index, G.N.E. (1984=100)

Sources: Statistics Canada, Fruit and Vegetable Processing Industries, Catalog No. 32-218; National Income and Expenditure Accounts, Catalog 13-201.

Table D.2.10. Ontario Exports of Fruits and Vegetables ('000s)

	Fruits and Fruit Preparations			Vegetables & Vegetable Preparations		
	From U.S.	Total	U.S. as % of Total	From U.S.	Total	U.S. as % of Total
1981	9,841	15,853	62.1	35,801	113,834	31.5
1982	9,903	13,975	70.9	44,124	96,691	45.6
1983	11,245	13,439	83.7	58,012	104,638	55.4
1984	17,156	19,534	87.8	55,626	101,126	55.0
1985	16,722	20,214	82.7	57,740	106,921	54.0

Source: Statistics Canada Catalogue 65-003 Exports by Country and Agriculture Statistics for Ontario, Publication 20, Ontario Ministry of Agriculture and Food.

Table D.2.11. Ontario Imports of Fruits and Vegetables ('000s)

	Fruits and Fruit Preparations			Vegetables & Vegetable Preparations		
	From U.S.	Total	U.S. as % of Total	From U.S.	Total	U.S. as % of Total
1981	289,962	432,925	67.0	199,36[illegible]	249,303	80.0
1982	309,298	467,685	66.1	201,091	243,984	82.4
1983	312,158	475,399	65.7	220,757	265,662	83.1
1984	352,466	545,875	64.6	245,576	303,008	81.0
1985	364,852	594,894	61.3	249,896	312,857	79.9

Source: Statistics Canada Catalogue 65-006 Imports by Country and Agriculture Statistics for Ontario, Publication 20, Ontario Ministry of Agriculture and Food.

Table D.3.1. United States Value of Fruit Production, 1984

	Value of Production (mil.$)	Percent of Total Fruit Production	Relative Ranking
Orange	1,304.3	25.3	1
Grapefruit	219.7	4.3	
Lemons	125.5	2.4	
Limes	17.5	.3	
Tangerines	38.9	.8	
Tangelos	22.8	.4	
Temples	21.5	.4	
Apples	927.5	18.0	3
Apricots	35.5	.7	
Avacados	91.3	1.8	
Bananas	2.7	-	
Cherries	164.1	3.2	
Figs	18.4	.4	
Cranberries	180.6	3.5	
Grapes	946.5	18.3	2
Nectarines	41.7	.8	
Olives	48.3	.9	
Peaches	318.9	6.2	5
Pears	160.8	3.1	
Papayas	9.2	.2	
Plums	47.8	.9	
Pomegranates	3.3	-	
Strawberries	413.3	8.0	4
Total	5,160.1	100.0	

Source: Agriculture Statistics 1985, United States Department of Agriculture.

Table D.3.2. Vegetable Production for the United States, 1984

	Value of Production	Percent of Total Vegetable Production	Relative Ranking in Terms of Value
	millions of dollars	percent	
Beans, Snap	113.9	1.7	
Broccoli	238.3	3.6	
Carrots	249.1	3.7	
Cauliflowers	182.6	2.7	
Celery	228.5	3.4	
Corn, sweet	367.1	5.5	6
Cucumbers	95.8	1.4	
Lettuce	679.3	10.2	3
Mushrooms	486.4	7.3	4
Onions	423.8	6.3	5
Peas	117.3	1.8	
Potatoes	2,032.1	30.5	1
Potatoes, Sweet	178.3	2.7	
Tomatoes	1,229.0	18.4	2
Total of Above	6,621.5	100.0	

Source: United States Dept. of Agriculture, Agricultural Statistics 1985.

Table D.3.3. Apple Utilization in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	1,475,166	1,609,156	1,695,248	1,656,511	1,645,443
Mich.	190,508	278,958	217,723	217,723	288,030
N.Y.	204,116	326,585	301,637	280,772	317,513
Penn.	112,400	154,765	147,417	166,921	170,096
Wash.	312,977	265,350	362,872	352,893	217,723
FRESH					
U.S.	2,020,154	2,053,221	2,095,813	2,115,589	1,920,364
Mich.	108,862	165,500	122,469	131,541	197,312
N.Y.	158,757	185,972	197,311	181,890	185,518
Penn.	69,036	83,370	79,378	93,893	95,254
Wash.	938,931	920,788	1,022,846	985,198	712,136

Source: Non-Citrus Fruits and Nuts; Agricultural Statistics Board, National Agricultural Statistics Service, USDA, July 1986, pg.6; January 1984, pg. 16.

(1) Breakdown between processing and fresh markets is not available on a production basis.

Table D.3.4. Cherry Utilization in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING (Sweet)					
U.S.	68,748	60,781	66,836	66,914	66,641
Mich.	19,504	21,319	14,515	25,401	25,401
Oreg.	27,578	21,319	29,483	17,690	20,865
Wash.	11,430	13,336	15,785	12,065	13,698
PROCESSING (Tart)					
U.S.	58,422	107,728	67,267	112,490	123,649
Mich.	39,009	86,182	38,555	86,182	95,254
N.Y.	3,130	9,435	10,296	11,340	9,979
FRESH (Sweet)					
U.S.	63,719	60,518	86,264	82,091	48,480
Cal.	21,772	7,983	11,703	25,038	17,554
Mich.	1,361	1,814	1,814	2,722	2,722
Ore.	5,987	10,433	8,618	9,072	3,629
Wash.	28,848	32,749	57,606	38,555	18,325
FRESH (Tart)					
U.S.	1,814	3,357	2,404	3,583	3,447
Mich.	907	2,268	907	2,268	3,268
N.Y.	45	91	136	436	227

Source: Non-Citrus Fruits and Nuts; Agricultural Statistics Board, National Agricultural Statistics Service, USDA, July 1986, pg. 15; January 1984, pg. 17.

(1) Breakdown between processing and fresh markets is not available on a production basis.

Table D.3.5. Grape Utilization in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	3,565,862	4,678,981	4,253,868	4,074,972	4,375,793
Cal.	3,166,059	4,269,008	3,746,201	3,634,164	4,036,952
N.Y.	132,902	139,706	169,189	166,921	128,820
Penn.	53,705	40,914	55,792	52,616	44,543
Wash.	143,788	152,588	204,115	152,406	105,051
FRESH					
U.S.	477,440	640,723	608,800	614,061	708,589
Ariz.	11,249	13,698	13,245	12,701	16,783
Cal.	456,312	617,064	585,585	589,667	683,107
Mich.	1,451	1,814	1,633	1,542	1,360
N.Y.	3,175	2,722	4,082	4,082	3,629

Source: Non-Citrus Fruits and Nuts; Agricultural Statistics Board, National Agricultural Statistics Service, USDA, July 1986, pg.23; January 1984, pg. 21. 22.

(1) Breakdown between processing and fresh markets is not available on a production basis.

Table D.3.6. Peach Utilization in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	593,659	510,289	356,839	535,690	507,839
Cal.	567,441	494,413	340,646	503,485	417,530
Penn.	2,268	3,084	5,216	2,948	1,588
S.C.	11,340	2,722	2,268	14,061	5,443
FRESH					
U.S.	609,171	446,696	438,667	583,725	420,841
Cal.	131,088	120,655	137,438	141,974	142,881
Penn.	27,215	37,739	37,421	35,607	15,377
S.C.	179,168	87,996	34,019	167,375	94,347

Source: Non-Citrus Fruits and Nuts; Agricultural Statistics Board, National Agricultural Statistics Service, USDA, July 1986, pg.29; January 1984, pg. 26.

(1) Breakdown between processing and fresh markets is not available on a production basis.

Table D.3.7. Strawberry Utilization in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	72,578	132,766	139,751	110,086	120,065
Cal.	64,546	100,470	96,750	74,207	87,724
Mich.	1,769	1,950	2,132	1,950	2,858
Ore.	21,183	24,467	33,838	25,401	20,865
Wash.	5,080	6,078	7,031	8,527	8,618
FRESH					
U.S.	242,943	265,441	265,532	339,376	342,052
Cal.	180,211	184,021	186,289	267,981	263,264
Fla.	30,481	44,225	46,538	39,326	48,081
Mich.	6,214	7,847	5,216	6,622	4,536
N.Y.	4,989	5,670	6,123	6,940	7,820

Source: Non-Citrus Fruits and Nuts; Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg.21; December 1983, pg. 27.

Table D.3.8. Bean (Snap) Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	659,779	584,097	532,887	604,282	637,285
Michigan	32,822	33,239	37,594	44,452	44,127
N.Y.	87,162	91,071	80,031	74,988	82,717
Ore.	130,997	121,000	112,173	116,428	113,234
Wis.	194,236	172,618	191,125	213,305	225,724
FRESH					
U.S.	N/A	N/A	N/A	N/A	N/A

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 37; Dec. 83, pg. 33.

Table D.3.9. Broccoli Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983(1)	1984	1985
PROCESSING					
U.S.	136,295	154,420	124,483	160,653	157,541
CA.	131,178	144,786	114,577	149,413	143,334
FRESH					
U.S.	204,887	245,574	253,194	305,720	324,498
CA.	181,255	215,365	227,974	278,776	290,978

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 16; Dec. 83, pg. 21.

(1) Program modification in 1983 mean that data from 1983 and before may not be comparable with post 1983 data.

Table D.3.10. Carrot Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983(1)	1984	1985
PROCESSING					
U.S.	331,992	380,861	358,490	374,593	343,522
CA.	68,039	75,251	109,224	95,708	68,401
Mich.	22,044	27,996	23,705	27,215	25,138
Ore.	33,411	37,149	19,595	19,504	19,631
Wash.	57,134	79,215	54,975	62,387	82,009
FRESH					
U.S.	596,289	681,474	690,999	701,976	696,125
CA.	373,531	443,929	411,951	449,100	428,688
Mich.	37,648	49,532	51,392	64,637	50,348
Ore.	103,736	96,615	94,301	76,158	82,599
Wash.	22,679	15,513	17,599	20,548	20,684

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 19; Dec. 83, pg. 23.

(1) Program modification in 1983 mean that data from 1983 and before may not be comparable with post 1983 data.

Table D.3.11. Cauliflower Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983(1)	1984	1985
PROCESSING					
U.S.	78,522	88,477	77,573	84,876	79,777
CA.	63,410	64,410	55,247	53,569	49,895
FRESH					
U.S.	157,713	154,357	168,010	218,494	222,441
CA.	115,575	111,356	124,601	166,468	167,284
ARIZ.	12,882	12,882	15,785	20,865	25,582

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 17; Dec. 83, pg. 25.

(1) Program modification in 1983 mean that data from 1983 and before may not be comparable with post 1983 data.

Table D.3.12. Sweet Corn Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983(1)	1984	1985
PROCESSING					
U.S.	2,541,892	2,899,665	2,020,345	2,315,278	2,394,956
Minn.	622,453	730,362	452,356	607,176	619,232
Ore.	329,842	414,091	300,948	331,484	321,804
Wash.	341,127	473,947	316,878	222,949	296,430
Wis.	648,380	622,525	515,532	579,280	606,749
FRESH					
U.S.	625,954	621,237	674,398	707,102	715,130
Cal.	68,083	63,775	71,486	68,991	70,034
Flor.	209,876	204,660	222,168	209,604	208,198
N.Y.	71,486	70,760	87,225	92,396	86,318
Ohio	44,225	47,173	47,627	51,029	53,796

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 9, p. 38; Dec. 83, pg. 34; June. 84, p. 12.

(1) Program modification in 1983 mean that data from 1983 and before may not be comparable with post 1983 data.

Table D.3.13. Cucumber Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING (for pickles)					
U.S.	N/A	N/A	N/A	560,855	629,973
Minn.	N/A	N/A	N/A	108,278	121,925
Ore.	N/A	N/A	N/A	73,135	90,019
Wash.	N/A	N/A	N/A	51,074	54,866
Wis.	N/A	N/A	N/A	55,692	56,227
FRESH					
U.S.	N/A	N/A	N/A	N/A	N/A

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 39.

Table D.3.14. Pea Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	412,812	450,224	386,223	449,363	524,178
Minn.	79,351	88,250	72,801	92,895	116,818
Ore.	40,143	33,321	36,514	45,114	39,181
Wash.	80,022	98,266	88,668	99,318	89,267
Wis.	113,815	134,190	99,935	115,738	145,947
FRESH					
U.S.	N/A	N/A	N/A	N/A	N/A

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 40; Dec. 1983, pg. 35.

Table D.3.16. Tomato Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PROCESSING					
U.S.	5,185,560	6,621,499	6,377,331	6,968,196	6,510,950
Cal.	4,448,086	5,577,344	5,418,524	5,979,905	5,535,649
Ind.	75,650	126,606	126,651	146,990	127,078
Mich.	107,319	185,673	166,087	157,759	150,882
Ohio	229,607	333,933	368,859	353,392	367,381
FRESH					
U.S.	1,187,317	1,223,469	1,235,443	1,278,625	1,350,474
Cal.	346,996	324,498	353,075	319,645	338,061
Fla.	518,544	584,678	619,785	629,855	640,923
Penn.	26,127	28,531	24,766	34,700	34,836
S.C.	69,399	57,560	42,456	51,165	52,390
Ten.	23,405	24,403	19,051	38,101	57,152

Source: Vegetables Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, June 1986, pg. 14, 41; Dec. 1983, pg. 36; June 1984, p. 19.

Table D.3.15. Potato Production in the United States, 1981-1985 (Metric Tonnes)

	1981	1982	1983	1984	1985
PRODUCTION					
U.S.	15,358,152	15,958,297	15,145,872	16,447,721	16,466,061
Idaho	3,834,651	4,159,875	3,900,421	3,928,090	4,649,979
Maine	1,202,921	1,226,054	1,023,299	968,868	1,279,804
Oregon	984,744	957,302	939,385	1,067,071	1,219,613
Wash.	2,400,399	2,394,956	2,453,015	2,582,062	2,886,194
PROCESSING					
U.S.	7,816,627	7,751,401	7,766,642	8,422,261	8,715,461
FRESH					
U.S.	5,079,120	5,437,006	4,869,244	5,139,995	5,726,784

Source: Potatoes Summary, Agricultural Statistics Board, National Agricultural Statistics Service, USDA, Sept. 1986, p. 8, 12; Sept. 1984, p. 8, 12; Sept. 1983, p. 8.

Note: Processing and Fresh do not sum to production because of seed potato production, home consumption and waste.

Table D.3.17. United States Fruit and Vegetable Processors, Selected Years, 1980-1984

Year	Establishments (b)	Production Employees ('000)	Product Shipments Current (mil.$)	Product Shipments Constant (mil.$)	Total Value Added Current (mil.$)	Total Value Added Constant (mil.$)
Fruit and Vegetable Canners and Preservers						
1980		120	15,829	19,818	6,245	7,818
1981		117	17,235	19,700	6,917	7,899
1982	1,440	108	17,742	18,416	7,851	8,456
1983		102	18,362	19,060	8,356	8,674
1984		106	19,998	19,998	8,868	8,868
change 1970-82		-14	4,169	180	2,623	1,050
% change		-12	26	1	42	13
annual % (simple)		-2.3	5.3	0.2	8.4	2.7
Frozen Fruit and Vegetable Processors						
1980		75	7,802	9,768	3,299	4,130
1981		74	8,598	9,819	3,681	4,204
1982	653	74	9,479	10,209	4,303	4,850
1983		75	10,309	10,701	4,828	5,431
1984		77	11,366	11,366	5,274	5,274
change 1972-82		1.6	3,564	1,398	1,975	1,144
% change		2	46	16	60	28
annual % (simple)		0.4	9.1	3.3	12	5.5

a
Fruit and vegetable canners and preservers is the aggregation of canned specialities (SIC 2032), canned fruits and vegetables (SIC 2033), dehydrated fruits, vegetables and soups (SIC 2034) and pickles, sauces, and salad dressings (SIC 2035); frozen fruit and vegetable processors is the aggregation of frozen fruits and vegetables (SIC 2036) and frozen specialties (SIC 2038).

b
Establishment figures are for 1982, a U.S. census year.

Source: U.S. Department of Commerce, U.S. Industrial Outlook 1987, Washington: January, 1986; Producer Price Indexes from U.S.D.A., ERS, Statistical Bulletin 736; Gross National Expenditure Implicit Price Index from Department of Commerce, Bureau of Economic Analysis.

Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products.

Canada		United States	
Tariff Item	MFN Rate, 1986	Tariff Item	MFN Rate, 1986
9201-1	Apples, fresh free	146.10	Apples, fresh free
9909-1	Apples, dried, desiccated, evaporated or dehydrated 10%	146.12	Apples, dried .75¢/lb
10601-1	Apples, in airtight containers, including apple sauce 5%	146.14	Apples, otherwise prepared or preserved .5¢/lb
10659-1	Apple juice, not including concentrate or reconstituted juice 5%		
10660-1	Apple juice concentrate 50¢ but not less than 10%		
9205-1	Cherries,sour, fresh 4¢/lb but not less than 12.5% for at most 10 weeks. Otherwise free.	146.90	Cherries, fresh, not in airtight or watertight containers free
9206-1	Cherries,sweet, fresh, n.o.p. 3¢/lb but not less than 10% for at most 8 weeks. Otherwise free.	146.91	Cherries, fresh, in airtight or watertight containers 1¢/lb
9207-1	Cherries,sweet, fresh, for processing 4¢/lb but not less than 12.5%.		
10520-1	Cherries, preserved in brine or SO^2 5¢/lb but not less than 12.5%	146.95	Cherries, in brine with pits 5.5¢/lb
		146.96	Cherries, in brine with pits removed 9.5¢/lb
10527-1	Cherries, sweet, preserved in SO^2 for manufacture of maraschino cherries free		
10603-1	Cherries, in airtight containers 15%		
10702-1	Cherries, frozen 5¢/lb but not less than 15%	146.97	Cherries, frozen 3.5¢/lb + 5%
		146.99	Cherries, otherwise prepared or preserved 7¢/lb + 10%
9209-1	Grapes, Vitis Vinifera species free	147.61	Grapes, fresh, entering 1 Feb to 31 March 4.2¢/ft^3 the bulk capacity of the package
9210-1	Grapes, Vitis Lambrusca species 1¢/lb for at most 15 weeks. Otherwise free.	147.63	Grapes, fresh, entering 1 April to 30 June free
10661-1	Grape juice for wine making free	147.64	Grapes, fresh, entering at other times 6¢/ft^3 the bulk capacity of the package
10662-1	Grape juice, n.o.p. 15%	147.77	Grapes, otherwise prepared or preserved 8.3%
		153.32	All jellies 7%

Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products, Continued

Canada		United States	
Tariff Item	MFN Rate, 1986	Tariff Item	MFN Rate, 1986
9212-1	Peaches, fresh, n.o.p. 3¢/lb but not less than 12.5% for at most 14 weeks. Otherwise free.	148.70	Peaches, fresh or in brine, entering 1 June to 30 November .2¢/lb
9213-1	Peaches, fresh, for processing 2¢/lb but not less than 12.5%.	148.72	Peaches, fresh or in brine, entering at other times .01¢/lb
10604-1	Peaches, in airtight containers 13%	148.77	Peaches, otherwise prepared or preserved, white fleshed 10%
10703-1	Peaches, frozen 12.5%	148.78	Peaches, otherwise prepared or preserved, other colored fleshed 20%
9220-1	Strawberries, fresh, n.o.p. 3¢/lb but not less than 10% for at most 8 weeks. Otherwise free.	146.58	Strawberries, fresh or in brine, entering 15 June to 15 September .2¢/lb
9221-1	Strawberries, fresh, for processing 3¢/lb but not less than 10%.	146.60	Strawberries, fresh or in brine, entering other times .75¢/lb
10522-1	Strawberries, preserved in brine or SO[2] 5¢/lb but not less than 17.5%		
10531-1	Strawberry jam, with/without pectin 15%	153.03	Strawberry jam 3%
10704-1	Strawberries, frozen, for processing 3¢/lb but not less than 10%		
10705-1	Strawberries, frozen, n.o.p. 15%	146.76	Strawberries, frozen 14%
8703-1	Beans, snap, fresh, n.o.p. 2¢/lb but not less than 10% for at most 14 weeks which may be divided into 2 periods. Otherwise free.	135.16	Other than Lima beans, fresh, chilled or frozen (but not reduced in size or otherwise prepared) 3.5¢/lb
8704-1	Beans, snap, for processing 1¢/lb but not less than 10%		
8907-1	N.o.p., in airtight containers 12.5%		
9008-1	N.o.p., frozen 15%	138.46	Other, fresh, chilled or frozen, and cut, sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%
8707-1	Broccoli, fresh, n.o.p. 2.5¢/lb but not less than 15% for at most 16 weeks. Otherwise free.	138.05	Broccoli, fresh, chilled or frozen, and cut sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%
8708-1	Broccoli, for processing 1.5¢/lb but not less than 10%		
9003-1	Broccoli, frozen 20%		

Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products, Continued

Canada		United States	
Tariff Item	MFN Rate, 1986	Tariff Item	MFN Rate, 1986
8709-1	Brussel sprouts, fresh, n.o.p. 3¢/lb but not less than 12.5% for at most 20 weeks. Otherwise free.		
9004-1	Brussel sprouts, frozen 20%	138.46	Other, fresh, chilled or frozen, and cut, sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%
8712-1	Carrots, fresh, n.o.p. .5¢/lb for at most 40 weeks which may be divided into 2 periods. Otherwise free.	135.42	Carrots, fresh, chilled or frozen (but not reduced or otherwise prepared) .5¢/lb
8713-1	Carrots, baby, fresh 1¢/lb but not less than 5% for at most 40 weeks which may be divided over 2 periods. Otherwise free.	135.41	Carrots, under 4" long; fresh, chilled or frozen (but not reduced or otherwise prepared) 1¢/lb
8902-1	Carrots, baby, in airtight containers 17.5%		
9002-1	Carrots, baby, frozen 22.5%	138.46	Other, fresh, chilled or frozen, and cut, sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%
8714-1	Cauliflower, fresh 1¢/lb but not less than 5% for at most 20 weeks which may be divided over 2 periods. Otherwise free.	135.50 135.51	Cauliflower, fresh, chilled or frozen (but not reduced or otherwise prepared) anc entering 5 June to 15 October 5.5% Cauliflower, fresh, chilled or frozen (but not reduced or otherwise prepared) anc entering in the rest of the year 12.5%
9005-1	Cauliflower, frozen 20%	138.05	Cauliflower, fresh, chilled or frozen, and cut, sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%
8716-1	Corn-on-the-cob, fresh 1.5¢/lb but not less than 15% for at most 12 weeks which may be divided over 2 periods. Otherwise free.	135.75	Corn-on-the-cob, fresh, chilled or frozen (but not reduced or otherwise prepared) 25%
8904-1	Corn, in airtight containers 12.5%	141.83	Corn, in airtight containers 13.1%
9008-1	N.o.p., frozen 15%	138.46	Other, fresh, chilled or frozen, and cut, sliced or otherwise reduced in size (but not otherwise prepared or preserved) 17.5%

Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products, Continued

Canada		United States	
Tariff Item	MFN Rate, 1986	Tariff Item	MFN Rate, 1986
8717-1	Cucumbers, fresh, n.o.p. 2.25¢/lb but not less than 15% for at most 30 weeks which may be divided over 2 periods. Otherwise free.	135.90	Cucumbers, fresh, chilled or frozen (but not reduced or otherwise prepared entering 1 December to 29 February 2.2¢/lb
8718-1	Cucumbers, fresh, for processing 1¢/lb but not less than 10%	135.95	Cucumbers, fresh, chilled or frozen (but not reduced or otherwise prepared entering 1 March to 30 April 3¢/lb
		135.97	Cucumbers, fresh, chilled or frozen (but not reduced or otherwise prepared entering 1 May to 30 June or 1 September to 30 November 3¢/lb
		135.99	Cucumbers, fresh, chilled or frozen (but not reduced or otherwise prepared entering 1 July to 31 August 1.5¢/lb
9020-1	Vegetables, pickled or preserved 12.5%	141.77	Cucumbers packed in salt, brine, or pickled 12%
8725-1	Mushrooms, fresh, n.o.p. 4.5¢/lb but not less than 10%	144.10	Mushrooms, fresh 5¢/lb + 25%
8726-1	Mushrooms, fresh, for processing 4.5¢/lb but not less than 10%		
9060-1	Mushrooms, processed, dried 10%	144.16	Mushrooms, dried 1.5¢/lb + 4.8%
9061-1	Mushrooms, processed, n.o.p. 20%	144.20	Mushrooms, otherwise prepared or preserved 3.2¢/lb drained weight + 10%
8732-1	Peas, green, fresh, n.o.p. 2.¢/lb but not less than 10% for at most 12 weeks . Otherwise free.	136.95	Peas, fresh or chilled (but not reduced or otherwise prepared) entering 1 July to 30 September .5¢/lb
8733-1	Peas, green, fresh, possibly shelled and chilled, for processing 1¢/lb but not less than 10%	137.04	Peas, fresh or chilled (but not reduced or otherwise prepared) entering the res of the year 2¢/lb
		136.97	Peas, frozen (but not reduced or otherwise prepared) entering 1 July to 30 September 1¢/lb
		137.04	Peas, frozen (but not reduced or otherwise prepared) entering 1 entering the rest of the year 2¢/lb
8907-1	N.o.p., in airtight containers 12.5%		
9008-1	N.o.p., frozen 15%		

Table D.4.1. Selected Tariffs on Imported Fruits, Vegetables, and Their Products, Continued

Canada		United States	
Tariff Item	MFN Rate, 1986	Tariff Item	MFN Rate, 1986
8305-1	Potatoes,in their natural state,n.o.p. 35.3¢/cwt	137.25	Potatoes, white or Irish, other than seed and a 45M lb limit 35¢/cwt
9035-1	Potatoes, frozen 10%		
9037-1	Potatoes, n.o.p. 10.3%		
8742-1	Tomatoes, fresh, n.o.p. 2.5¢/lb but not less than 15% for at most 32 weeks which may be divided into 2 separate weeks. Otherwise free.	137.60	Tomatoes, fresh, chilled or frozen (but not reduced or otherwise prepared) entering 1 March to 14 July or 1 September to 14 November 2.1¢/lb
8743-1	Tomatoes, fresh, for processing 1¢/lb but not less than 15%	137.62	Tomatoes, fresh, chilled or frozen (but not reduced or otherwise prepared) entering 15 July to 31 August 1.5¢/lb
		137.63	Tomatoes, fresh, chilled or frozen (but not reduced or otherwise prepared) entering 15 November to 29 February 1.5¢/lb
8905-1	Tomatoes, in airtight containers 13.6%		
8902-1	Tomato paste, in airtight containers 13.6%	141.65	Tomato, paste and sauce 13.6%
9023-1	Tomato ketchup 15%		
9030-1	Tomato juice 15%		
9100-1	Soup (tomato) 12.5%		

SOURCE: Canadian and US Tariff Schedules

Table D.5.1. Labour Productivity of Canadian and U.S. Food Processing Industries,1984

	Establishments	Total Employees	Value Added (mil.$)	Value of Shipments (mil.$)	Hours Worked (mil.)	Value Added Per Hour	Value Shipments Hour
Fruit and vegetable canners and preservers							
Ontario	85	5,204	473	1,078	10	$46.10	$104.70
U.S. (1)	1,440	106,000	11,528	25,984	199	$57.80	$130.40
Frozen fruit and vegetable processors							
Ontario	14	1,161	80	158	2	$34.80	$68.70
U.S.	653	76,900	6,856	14,776	148	$46.42	$100.00

(1) Exchange rate of Cdn$ = 1.3U.S.$

Source: U.S. Department of Commerce, U.S. Industrial Outlook 1987, and; Statistics Canada, Fruit and Vegetable Processing Industries Catalogue 32-218

Table D.5.2. Production, Trade and Disappearance of Selected Fruits in Canada for an Average Year, 1982-84

	Production	Imports	Exports	Manuf.	Waste	Disappear.	Self Sufficiency
	- - - - - - in thousand metric tonnes of fresh equivalents - - - - - -						Percent
Apples	659.5	98.6	75.8	193.3	12.2	478.4	137.8
Fresh	465.6	97.3	66.6	193.3	12.2	292.5	159.2
Canned	2.2a	0.7	0.2			2.9a	75.9
Juice	170.0	0.0	9.0			163.6	104.0
Frozen	2.2	0.0	0.0			2.1	103.3
Dried	--	0.5	0.0			0.0	
Sauce	14.5	0.0	0.0			15.0	96.4
Filling	5.3	0.0	0.0			4.4b	119.6
Cherries							
Fresh	13.8	7.6	0.0	--	--	--	
Canned	--	0.0	2.8			--	
Frozen	3.7c	0.5	0.0			4.3c	86.0
Grapes							
Fresh	84.4	152.8	2.1	75.9	14.3	144.9	58.2
Juice	0.0	16.5	0.0			16.5	0.0
Peaches							
Fresh	34.6	19.3	0.0	4.0	3.0	46.9	73.7
Canned	5.1	20.2	0.0			23.9	21.3
Strawberries							
Fresh	30.8	19.3	0.0	5.7	3.5	40.9	75.4
Canned	--	0.1	0.0			--	
Frozen	5.4	5.8	0.0			11.0	49.5
Jams and Jellies	--	3.7	1.1			--	
Total Fruits	1670.2	1948.0	123.9	767.3	92.2	2451.4	68.1
Fresh	1234.7	1342.8	83.2	767.3	92.1	1542.3	80.1
Canned	113.0	135.0	3.9			216.9	52.1
Juice	28.9	10.8	9.2			26.3	110.0
Frozen	292.4	401.6	25.8			652.3	44.8
Dried	0.0	28.1	0.5			--	
Sauce	--	--	--			--	
Filling	--	--	--			--	

SOURCE: "Apparent per capita food consumption in Canada", Statistics Canada, Cat. No. 32-230, Part II, Annual

a. 1982 only
b. 1982 and 1983
c. 1983 only
– means data not released

Table D.5.3. Production, Trade and Disappearance of Selected Vegetables in Canada for an Average Year, 1982-84

	Production	Imports	Exports	Manuf.	Waste	Disappear.	Self Sufficiency
	- - - - - - in thousand metric tonnes of fresh equivalents - - - - - -						Percent
Beans,Green and Wax							
Fresh	47.9	9.2	0.0	38.1	1.2	17.8	268.8
Canned	32.5	1.6	1.3			33.4	97.2
Frozen	12.8	1.1	0.7			12.7	100.8
Broccoli							
Fresh	7.4	38.8	0.0	4.0	3.4	38.8	19.0
Frozen	3.0	1.2	0.0			4.3	70.7
Brussel Sprouts							
Fresh	4.1	3.6	0.0	3.5	0.3	3.9	106.0
Frozen	4.1	0.0	0.0			4.6	89.0
Carrots							
Fresh	274.2	53.8	53.4	47.1	6.6	211.6	129.6
Canned	3.8	0.9	0.0			5.4	71.2
Frozen	15.7	2.8	0.0			17.9	87.3
Cauliflower							
Fresh	48.8	24.2	0.0	5.3	5.4	62.4	78.1
Frozen	3.7	0.0	0.0			3.8	96.5
Corn							
Fresh	295.2	20.0	0.0	239.0	6.1	70.1	420.8
Canned	62.8	1.7	12.8			54.0	116.2
Frozen	26.4	0.0	8.8			15.1	174.8
Cucumbers							
Fresh	79.3	34.9	0.0	46.4	5.4	62.4	127.0
Onions							
Fresh	132.0	70.2	15.8	0.0	10.8	169.0	78.1
Peas							
Fresh	66.0	3.3	0.0	66.7	0.1	2.5	2682.8
Canned	34.7	0.0	1.3			34.9	99.5
Frozen	36.3	0.7	6.1			29.6	122.8
Total Vegetables							
Fresh	1372.9	697.4	126.2	484.9	94.4	1331.1	103.1
Canned	163.6	32.6	21.6			170.9	95.8
Frozen	103.0	10.1	17.8			89.1	115.6
Mushrooms							
Fresh	38.1	2.2	0.0	12.1	0.0	28.1	135.5
Canned	11.4	21.1	0.0			36.1b	31.6
Potatoes							
White	1782.4	106.3	225.4	154.6	356.3	1151.0	154.9
Tomatoes							
Fresh	535.2	133.0	0.9	470.7	29.5	146.1	366.3
Canned	66.7	25.6	0.0			85.2	78.3
Juice	88.4	0.4	0.5			86.9	101.7
Solids(P/P/P)	15.0	29.0	0.0			41.9	35.7

SOURCE: "Apparent per capita food consumption in Canada", Statistics Canada, Cat. No. 32-230, Part II, Annual

Table D.5.4. Average Farm Land and Buildings Prices in Canada and the United States in 1984

	Canadian $/Hectare (1)
CANADA	
Southern Ontario	4,795
Central Ontario	4,678
Simple Average	4,737
UNITED STATES	
New York	2,704
Pennsylvania	5,274
Michigan	3,379
Wisconsin	3,361
Minnesota	3,479
Ohio	4,638
Indiana	5,121
North Carolina	4,432
South Carolina	2,978
Florida	5,165
Idaho	2,614
Washington	3,088
Oregon	2,243
California	6,161
Simple Average	3,903

(1) Exchange rate of Cdn$ = 1.3U.S.$

Source: Farm Real Estate: Historical Series data, 1950-1 Economics Research Service USDA, and;
Rural Real Estate Prices in Ontario, 1980 - 1984 Ontario Ministry of Agriculture and Food

Table D.5.5. Average Annual Yields for Selected Crops in Ontario and Major Producing States in the United States, 1983-85

	1983	1984	1985	Average tn/h
Strawberries, spring				
Fresh and Processing				
United States (cwt/a)	208.00	237.00	236.00	25.4
California	480.00	535.00	530.00	57.7
Michigan	60.00	70.00	65.00	7.3
New York	45.00	51.00	51.00	5.5
Oregon	115.00	92.00	74.00	10.5
Washington	62.00	70.00	71.00	7.6
Ontario (tn/h)	6.10	6.73	7.72	6.9
Beans, Green or Snap				
Processing				
United States (t/a)	2.99	3.07	3.16	6.9
Michigan	2.80	2.80	2.60	6.1
New York	2.61	2.52	2.73	5.9
Oregon	5.52	5.37	5.38	12.2
Wisconsin	2.91	3.03	2.90	6.6
Canning	2.93	3.01	3.06	6.7
Freezing	3.12	3.24	3.44	7.3
Ontario (tn/h)	5.50	6.50	6.30	6.1
Fresh				
Ontario (tn/h)	6.30	6.30	5.50	6.0
Broccoli				
Fresh and Processing				
United States (cwt/a)	91.00	97.00	97.00	10.6
California	92.00	99.00	97.00	10.8
Texas	81.00	76.00	86.00	9.1
Oregon	85.00	88.00	95.00	10.0
Arizona	77.00	76.00	93.00	9.2
Ontario (tn/h)	12.90	11.90	8.10	11.0
Carrots				
Fresh and Processing				
United States (cwt/a)	265.00	253.00	254.00	28.8
California - Des	250.00	280.00	250.00	29.1
California - Other	310.00	295.00	285.00	33.3
Michigan	230.00	270.00	260.00	28.4
Oregon	415.00	430.00	480.00	49.5
Texas	210.00	145.00	145.00	18.7
Washington	400.00	425.00	435.00	47.1
Ontario (tn/h)				
Bunching	11.30	11.20	11.00	11.2
Topped, fresh and proc.	70.20	73.00	58.10	67.1
Cauliflower				
Fresh and Processing				
United States (cwt/a)	99.00	110.00	109.00	11.9
California	95.00	105.00	105.00	11.4
Arizona	120.00	115.00	115.00	13.1
Texas	91.00	82.00	80.00	9.5
New York - Long Island	120.00	130.00	110.00	13.5
New York - Upstate	105.00	110.00	120.00	12.5
Ontario (tn/h)	22.50	23.90	18.30	21.6

Table D.5.5. Average Annual Yields for Selected Crops, Continued

	1983	1984	1985	Average tn/h
Corn, sweet				
Fresh				
United States (cwt/a)	78.00	81.00	83.00	9.0
California	108.00	107.00	105.00	12.0
Florida	86.00	83.00	90.00	9.7
New York	76.00	76.00	67.00	8.2
Ohio	70.00	75.00	78.00	8.3
Ontario (tn/h)	5.50	6.10	5.60	5.7
Processing (weight in husk)				
United States (t/a)	5.57	5.97	6.06	13.2
Minnesota	4.60	5.82	5.77	12.1
Oregon	8.55	8.70	9.19	19.8
Washington	9.12	7.47	8.40	18.7
Wisconsin	4.82	4.95	5.09	11.1
Ontario (tn/h)	10.30	11.80	11.40	11.2
Cucumbers				
Processing				
United States (t/a)		5.97	6.03	9.0
Michigan		5.50	5.60	8.3
North Carolina		3.30	3.41	5.0
Ohio		11.73	12.60	18.2
Wisconsin		7.87	9.25	12.8
Ontario, field (tn/h)	20.40	20.50	20.70	20.5
Fresh				
Ontario, field (tn/h)	19.80	17.60	13.30	16.9
Peas (weight shelled)				
Processing				
United States (t/a)	1.38	1.50	1.63	3.4
Minnesota	1.25	1.38	1.58	3.1
Oregon	1.17	1.48	1.22	2.9
Washington	1.49	1.70	1.60	3.6
Wisconsin	1.36	1.48	1.64	3.3
Canning	1.40	1.45	1.62	3.3
Freezing	1.36	1.55	1.65	3.4
Ontario (tn/h)	2.20	3.80	4.60	3.5
Potatoes, fall				
United States (cwt/a)	280.00	285.00	308.00	32.6
Idaho - 10 SW Counties	340.00	335.00	375.00	39.2
Idaho - Other	270.00	260.00	290.00	30.6
Maine	240.00	240.00	285.00	28.6
Oregon - Malheur Co.	370.00	360.00	370.00	41.1
Oregon - Other	440.00	430.00	455.00	49.5
Washington	520.00	495.00	505.00	56.8
Ontario (tn/h)	22.20	21.40	24.10	22.6

Table D.5.5. Average Annual Yields for Selected Crops, Continued

	1983	1984	1985	Average tn/h
Tomatoes				
Fresh				
United States (cwt/a)	221.00	229.00	239.00	25.7
California - Des	220.00	225.00	220.00	24.8
California - Other	280.00	270.00	275.00	30.8
Florida	289.00	290.00	300.00	32.8
Pennsylvania	130.00	170.00	160.00	17.2
South Carolina	195.00	240.00	275.00	26.5
Tennesse	100.00	200.00	280.00	21.7
Ontario (tn/h)	22.50	22.60	23.70	22.9
Processing				
United States (t/a)	24.07	26.32	27.03	57.9
California	25.58	27.50	28.12	60.7
Indiana	18.37	21.32	20.60	45.1
Michigan	19.90	23.50	25.20	51.3
Ohio	21.40	24.50	25.47	53.3
Ontario (tn/h)	33.20	43.60	43.80	40.2

Sources: USDA, National Ag. Stats. Service, Ag. Stats Board,"Vegetables, 1985 Summary", Vg 1-1(86), June 1986
USDA, National Ag. Stats. Service, Ag. Stats Board,"Potatoes", 26 Sept 86 and "Potatoes and Sweet Potatoes", 27 Sept 85
OMAF, "Agricultural Statistics for Ontario", Publication 20, 1984 and 1985

Table D.6.1. Average Annual Per Capita Disappearance in Kilograms of Selected Fruits in Fresh Equivalents

	Period 1960-64	1965-69	1970-74	1975-79	1980-84
Apples					
Fresh	11.3	11.5	11.7	11.8	11.8
Canned	0.5	0.4	0.2	0.3	..
Juice	3.4	4.3	3.7	6.4	8.8
Frozen	0.2	0.3	0.2	0.2	0.2
Dried	0.2	0.1	0.2	0.2	0.1
Sauce	0.5	0.8	0.8	0.8	0.7
Filling	0.3	0.4	0.3	0.4	0.2
Cherries					
Fresh	0.4	0.4	0.6	0.6	..
Frozen	0.3	0.2	0.3	..	..
Grapes					
Fresh	4.4	5.5	4.7	5.4	5.6
Juice	0.0	0.1	0.7	0.3	0.7
Peaches					
Fresh	2.3	2.1	2.5	2.4	1.9
Canned	1.9	1.8	1.6	3.9	1.1
Strawberries					
Fresh	0.7	0.7	0.9	1.2	1.6
Canned	0.0	0.0	0.0	0.0	..
Frozen	0.4	0.5	0.5	0.5	0.4
Jams and Jellies	1.0	0.9	0.7	0.7	..
Total Fruits*	84.4	86.7	91.7	105.0	103.6
Fresh					55.6
Canned					4.6
Frozen					1.1
Juice					38.0
Dried					..
Jam,Jelly,M.					..
Other					0.7

.. means data not available

* Excludes tomato products as did Ag Canada while Stats Canada included them.

SOURCE: "Handbook on Food Expenditures, Prices, and Consumption", Agriculture Canada, 1983, 1984, and "Apparent per capita food consumption in Canada, Statistics Canada, Cat. No. 32-230, Part II, Annual

Table D.6.2. Average Annual Per Capita Disappearance in Kilograms of Selected Vegetables, Mushrooms, Potatoes, and Tomatoes in Fresh Equivalents

	Period				
	1960-64	1965-69	1970-74	1975-79	1980-84
Beans,Green and Wax					
Fresh	0.6	0.5	0.5	0.6	0.7
Canned	1.1	1.2	1.2	1.0	1.0
Frozen	0.3	0.4	0.4	0.5	0.6
Broccoli					
Fresh	0.0	0.1	0.4	0.8	1.4
Frozen	0.0	0.1	0.2	0.2	0.3
Brussel Sprouts					
Fresh	0.1	0.1	0.1	0.1	0.1
Frozen	0.0	0.1	0.1	0.2	0.3
Carrots					
Fresh	7.1	6.3	6.1	7.3	8.4
Canned	0.3	0.4	0.6	0.4	0.3
Frozen	0.0	0.1	0.6	1.0	1.3
Cauliflower					
Fresh	1.0	0.8	0.8	1.4	2.2
Frozen	0.0	0.0	0.1	0.1	0.2
Corn					
Fresh	2.1	2.0	1.8	2.4	3.0
Canned	5.4	5.7	5.4	5.1	5.3
Frozen	0.7	1.2	3.3	1.4	2.0
Cucumbers					
Fresh	0.9	1.0	1.2	1.8	2.2
Onions					
Fresh	5.1	5.5	5.3	6.4	6.8
Peas					
Fresh	0.0	..	0.2	0.1	0.1
Canned	2.0	1.9	1.6	1.3	1.1
Frozen	0.9	1.1	1.2	1.2	1.4
Total Vegetables *	45.9	46.7	49.6	56.9	65.6
Fresh	34.5	27.4	36.4	43.9	51.1
Canned	9.3	10.0	9.5	8.4	8.5
Frozen	2.0	2.9	3.7	4.3	6.0
Mushrooms					
Fresh	0.0	0.2	0.4	0.6	1.1
Canned	0.3	0.5	1.0	0.9	..
Potatoes					
White	69.5	68.8	69.6	72.8	68.7
Tomatoes					
Fresh	6.1	5.6	5.3	5.5	6.2
Canned	4.6	4.4	4.7	4.6	5.2
Juice	5.3	4.6	5.2	6.6	5.6
Paste, P &, P					8.6

.. means data not available

* Excludes mushrooms as did Ag Canada while Stats Canada included them.

SOURCE: "Handbook on Food Expenditures, Prices, and Consumption", Agriculture Canada, 1983, 1984, and "Apparent per capita food consumption in Canada", Statistics Canada, Cat. No. 32-230, Part II, Annual